



Graduate Bulletin

1985-1986

University of Wisconsin-Stout

Graduate College

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AN EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION UNIVERSITY

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While this bulletin was prepared according to the best information available as of July, 1984 all information as to fees, admission, graduation requirements and course offerings is subject to change.

Graduate College: 715/232-2211

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Programs—Education Specialist's Degree

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SCHOOL OF HOME ECONOMICS

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Programs—Master's Degrees

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SCHOOL OF EDUCATION AND HUMAN SERVICES

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Programs—Master's Degrees

Guidance and Counseling Gerald F. Davis
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Programs—Education Specialist's Degree

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GENERAL INFORMATION

WELCOME TO PROSPECTIVE STUDENTS:

Choosing a graduate school to guide the final steps in your formal education is a critical decision. In deciding to enter graduate study, you are joining a small group within our society who, by demanding more of themselves, have made greater contributions to that society. An effective graduate education will alter the values and perceptions which influence the remainder of your life, as well as the progress of your career. You will invest important days and hours of your lifetime, as well as a considerable amount of your resources, in increasing your own capabilities. Graduate programs and graduate schools differ in many important ways; I encourage you to examine this bulletin carefully and consider, if you will, whether the purposes, philosophies and growth environment at the University of Wisconsin-Stout make this University the best choice for you.

Graduate education has been a part of Stout since 1935. Because Stout is a special mission institution, we offer a limited number of degree programs. All of these programs are in areas of high societal need and all are in major thrust areas of the University. Each program has a strong basis of faculty expertise. Each program includes a component of professional studies and a component intended to develop student abilities for creative intellectual inquiry. Each master's degree program also includes learning experiences in the immediate professional setting. The curriculum for each program is designed after careful study of the professional field for which the graduate is preparing. Working with professionals in the field, the program director identifies competencies graduates will need; then learning experiences are selected or developed to help students attain these competencies. Provisions for monitoring student progress are made through Primary Evaluation Processes specified for each program. Students are assisted in planning and encouraged to set individual professional goals through the advisory process.

We expect each graduate to be prepared to advance in a profession, to contribute to that profession, and to have a foundation for continued individual development and growth.

If you find that your needs and your plans for your own professional development coincide with the nature of the programs and offerings at Stout, please

contact the director of the program in which you are interested. You may also write directly to the Graduate College for additional information.

Nelva G. Runnalls, Dean of Curriculum, Research and Graduate Studies

THE UNIVERSITY

Stout is one of 13 publicly supported universities in the University of Wisconsin System. It was founded as a private institution in 1893 by James H. Stout. A Menomonie industrialist and a man of great vision, he saw that students in America's developing industrial society needed a different kind of education, an education broader than that offered by the traditional curriculum. Since its founding, Stout has gained a position of national and international leadership in industrial, vocational and home economics education. Its programs in those fields are among the largest in the world. From this beginning, strong programs in the areas of man's relation to technology, vocation and society have been established. Although Stout is a career oriented university, its leaders have had the foresight to make the humanities and social sciences key parts of the total educational program.

MISSION

Stout makes a unique contribution to the University of Wisconsin System by concentrating its efforts in those higher education programs directly related to industry and technology, home economics, business, the helping professions and applied arts. Concentration within these selected areas enables the University to develop and offer highly specialized instruction in great depth. Recognizing the interdependence of knowledge in all areas and the need to humanize, individualize and personalize all aspects of student life, the University seeks to complement its specialized education with broader learning experiences and opportunities essential for personal, professional, esthetic and social effectiveness.

THE FACULTY AND STAFF

Because Stout has specialized in certain areas, a staff comprised of individuals nationally recognized in their fields has been developed. Classes are taught by highly qualified professionals. Of the more than 400 members of the instructional faculty and staff, well over one-third hold earned doctorate degrees, while others hold special degrees in their fields. One of the fine traditions at Stout has been the faculty and staff commitment to provide extra help to students.

LEARNING RESOURCES

Learning Resources provides services to assist instructional communications and the learning process. This service is divided into four functional units.

The Library Learning Center has an integrated audiovisual and print resource collection consisting of 177,879 volumes; more than 1,840 periodicals, 6,398 audiovisual items and 506,029 microformats. An interspersed stack/seating arrangement of 1,060 user stations is featured. Specialized collections of national prominence in Stout's major fields of graduate study and a complete collection of ERIC (Educational Resource Information Center) documents on microfiche are maintained. On-line computerized literature searches for 200 specialized data bases are offered free of charge to students and faculty. The library is open 94 hours per week. A media self-instruction laboratory provides students with facilities and equipment for learning media equipment operations and for producing some audiovisual materials.

Academic Computer Services provides computer support for graduate student and faculty research. Services provided include statistical consulting, programming assistance, data preparation for statistical analysis and optical scanning of mark-sense forms. Two time-sharing computers (a Digital Equipment Corporation PDP-11/70 and VAX 11/780) are available for on-line computation, with terminals located in classroom buildings, the Library Learning Center and all residence halls. Dial-up access is provided to both computers for remote use. All services are provided free for graduate student unfunded research.

Instructional Technology Services is housed in the Communications Center. Professional media specialists provide Stout staff and students with consultation in areas of instructional development, media design, utilization, media equipment and facilities; production of still and motion picture photography, graphics, instructional television, and audio recording; and maintenance of most media equipment, computer terminals and microcomputers.

The Stout Teleproduction Center produces programs for broadcast on Channel 28 serving Western Wisconsin, other public television stations affiliated with the Wisconsin ETV network, and for other state educational organizations and non-profit agencies.

FACILITIES

Modern and well-equipped facilities mark Stout's 122-acre campus. In recent years, 14 major facilities have been constructed around the perimeter of the central campus core. A total of 33 labs encompassing 131,691 square feet for technical work in electronics, power, wood, metals, graphic arts, packaging, industrial design, industrial graphics and plastics are available for industrial and vocational education majors.

A Counseling Center with video-tape equipment is used in guidance and school psychology in conjunction with a materials center. A Home Economics building, opened in 1973 and constructed at a cost of \$4 million, offers advanced research and laboratory facilities in the fields of textile and fashion design, fashion merchandising, food science and nutrition, child development,

family life, hotel and restaurant management, tourism and consumer education.

The Stout Vocational Rehabilitation Institute conducts research and provides practicum experience in work evaluation, placement services and professional assessment services to clients referred by state agencies.

THE GRADUATE COLLEGE

Accreditation: The graduate program at Stout is fully accredited by the North Central Association of Colleges and Secondary Schools (NCA) and the National Council for the Accreditation of Teacher Education (NCATE) to offer work at the master's (fifth year) and Education Specialist (sixth year) levels. The Marriage and Family Therapy program is accredited by the American Association of Marriage and Family Therapists.

Institutional Memberships: The University of Wisconsin-Stout holds membership in the Midwest Association of Graduate Schools and the Council of Graduate Schools in the United States.

Organization: The Graduate College, a unit of the Division of Academic Affairs, is responsible for graduate education in the University. The Graduate College administers graduate admissions, records, policies and other procedures relating to graduate students. The Graduate College includes, in addition to its administrative personnel, the Graduate Office, which provides services to graduate students, Research Promotion Services, which is responsible for encouraging, promoting, coordinating and monitoring research at the University, and the Office of Educational Strategy Development, which is responsible for encouraging innovation in instruction.

A Graduate Council and a Graduate Student Advisory Council provide advice to the college. The Graduate Council is chaired by the Dean for Curriculum, Research and Graduate Studies. The work of the Council is aided by a graduate committee, a committee on exceptions to graduate college policy and other committees as needed. Membership on the Graduate Council includes the graduate program directors, ten members elected from the Graduate Resident Program Faculty, the president of the Graduate Student Advisory Council, the Assistant Dean for Graduate Studies and Curriculum, and the Dean for Curriculum, Research and Graduate Studies, who is the Council Chair. A representative of the Faculty Senate is invited to all Council meetings.

The Graduate Student Advisory Council includes one student from each graduate program. The chair is elected by the group. In addition, during the summer term, the Graduate Student Club holds four informal meetings for graduate students and faculty.

School

Industry and Technology

Graduate Degree Programs

M.S. in Industrial Education

M.S. in Management Technology

M.S. in Safety

M.S. in Vocational Education

	Ed.S. in Industrial and Vocational Education
Home Economics	M.S. in Clothing, Textiles and Related Art
	M.S. in Food Science and Nutrition
	M.S. in Home Economics Education
	M.S. in Hospitality and Tourism
Education and Human Services	M.S. in Guidance and Counseling
	M.S. in Marriage and Family Therapy
	M.E. - Professional Development
	M.S. in Ed. - School Psychology
	M.S. in Vocational Rehabilitation
	Ed.S. in Guidance and Counseling
Learning Resources	M.S. in Media Technology

Functions: Stout serves three broad functions: instruction, service and research. As a part of the University, the Graduate College contributes to each function.

INSTRUCTION: The University offers programs for the preparation of professional personnel in the schools and areas listed. Common to all programs is the development of competencies in applied research. Continuing education beyond the bachelor's level for other than degree purposes is also a part of the college function.

SERVICE: The service function involves consultation to education, business, and industry in the areas of the graduate degree programs. Included also are such activities as sponsored workshops, publications, surveys and research, and participation as committee members and officers in appropriate local, state and national organizations.

RESEARCH: Research and scholarship by the faculty and staff are encouraged to constantly add to the bodies of knowledge on which degree programs are based. Studies of teacher education problems, technological developments, curriculum development procedures, field surveys, and experimental projects are reported in professional literature and to professional organizations. Consultation on research design is offered. Through the Center for Research and Educational Improvement, research activities of the University are encouraged and coordinated.

Graduate Resident Program Faculty for the graduate programs are those members of the University faculty who conduct the primary student progress evaluations for that program, either as individual faculty members or by membership on faculty committees. Course grades and the "Creative Intellectual Inquiry Experience" are primary evaluation processes for each graduate major at Stout. In addition, for selected programs, certain courses or other review procedures may also be specified as Primary Evaluation Processes. Graduate resident program faculty are recommended by the School dean and approved by the Vice Chancellor. They are listed in the program section of the bulletin with the programs they serve.

ADMISSION PROCEDURES

Students seeking graduate credit (either for degree or non-degree programs) should apply for permission to enroll at the Graduate Office. For students who seek admission to a graduate program (those seeking degrees or certification at Stout) the procedure is as follows:

1. **Apply for admission**, using the Application for Admission 104-0111, available from the Graduate office. Application should be made 30 days in advance of registration.(See specific program for any program-related deadlines.)
2. **Request transcripts** of all previous college work be forwarded to the Dean of the Graduate College by the registrar of college(s) where the work was completed.
3. **Supply supportive statements** of qualifications for graduate study as required by specific programs. See program outlines.
4. **Students from countries** where English is not the primary language must submit a TOEFL score.
5. **State of Wisconsin regulations** require submission of a \$20.00 non-refundable admission evaluation fee by all candidates for admission to the Graduate College. Please attach a check or money order, made out to UW-Stout, in the amount of \$20.00 to the admissions application.
6. **Declaration of finances** must be filed by each international student to show that financial support during the planned period of study is adequate.

For non-program students (graduate specials) seeking only permission to enroll for graduate courses, the procedure is as follows:

1. Complete only the indicated part of 104-0111, available from the Graduate Office.
2. Submit Registrar's Form (104-0114) available from the Graduate College, certifying that the student has earned a bachelor's degree from an accredited college or university.
3. Students from non-English speaking countries must submit a TOEFL score.

A student dropped from a graduate program is not eligible to enroll for graduate credit at Stout. Graduate special students may take 500 and 600 level courses. For 700 level course work, they should consult with the graduate student special adviser with respect to credit work for which they may be eligible. Practicums, internships and some courses are reserved for admitted candidates to degree programs. Non-program students may not enroll for courses which are designed to fulfill the creative intellectual inquiry requirement for any graduate program at Stout.

Graduate special students who later desire to become degree program students must make application for admission to the Graduate College using the usual processes to determine their admissibility. Graduate work taken as a graduate special student, if deemed appropriate to the degree program by the director of the program for which the applicant is seeking admission, may be used as a part of that degree program.

In addition to steps 1, 2, and 3 for non-program students, guest matriculants (those students enrolled in graduate programs at other colleges who wish

to earn graduate credit for transfer to those programs) should submit a Guest Matriculant form (104-0118) available from the Graduate office.

ADMISSION STATUS FOR PROGRAM STUDENTS

Admission requirements for some programs may be higher than requirements for the Graduate College. Graduate College admission requirements are:

FULL STATUS is granted an applicant for a master's degree program who has an undergraduate grade point average of at least 2.75 (based on a four-point scale) and has the required pattern of background preparation. Note: Upon written request for evaluation of G.P.A. calculation for the last two years, an applicant with a grade point average of at least 2.90 for the last two years of bachelor's degree work will be granted full status even though the four-year record is below 2.75. Applicants for an Ed.S. program must have earned a master's degree grade point average of 3.25 to be granted full status.

PROBATIONAL STATUS is granted a master's degree applicant having an undergraduate grade point average of less than 2.75, but not less than 2.25. An Ed.S. degree applicant with a master's degree grade point average between 3.00 and 3.25 may be admitted on probational status.

PROVISIONAL STATUS may be granted a program applicant having a qualifying grade point average but who does not have the pattern of background preparation required by the requested program. Such a student will be required to make up undergraduate deficiencies and/or take additional graduate course work to earn the degree.

TRIAL STATUS may be granted a master's degree applicant having less than a 2.25 grade point average in undergraduate work if records of work experience or other supplemental information are judged by the Graduate College to justify such admission. Such a student must take a block of course work prescribed by the program director in which an average of "B" or better must be earned to gain admission to the program on probation. Work earned on trial status will normally be in addition to the usual degree requirements.

SPLIT PROGRAM STATUS may be granted an applicant who is in the last term of undergraduate work, needing less than a full load to earn the bachelor's degree. Such a student is limited to a total of 16 credits per semester. Under mitigating circumstances, a split program student may be admitted on probational or provisional, but never on trial status. Split program students are eligible only as program students.

NOTIFICATION: Each applicant will be informed generally within 30 days of receipt of all needed materials as to acceptance or rejection. Program students will, if accepted, be informed as to the status granted. (Non-program students permitted to enroll for graduate courses without admission are not given any status designation.) Those applicants denied admission will be so informed. Generally, denial will be due to one or a combination of the following:

1. Too low previous scholastic record.

2. Lack of adequate evidence of, or insufficient background preparation and/or experience.
3. Failure to submit requested materials and/or submission of fraudulent records.
4. When the total number of qualified students applying for a program exceeds the number that can be accommodated.
5. For international students, inadequate TOEFL score or inability to present documentation of adequate financial support for the period of study.

TERM OF VALIDITY OF ADMISSION. Admission to the Graduate College will be granted for a particular term of enrollment. Admitted applicants may begin their graduate study (first enrollment) in any of the following three consecutive academic terms. Applicants who are granted admission, but who do not initially enroll before two semesters or one summer session have passed, beginning with the term for which admission was granted, must reapply to be eligible for subsequent admission. Such reapplication for admission will not require payment of an additional application fee. Through appropriate approval procedures, individual programs may further restrict the length of admission policy. An academic term is either Semester I, Semester II or Summer Session.

DEGREE PROGRESS

Procedures are developed to facilitate orderly progress toward the degree. Each student is assigned an adviser who aids in making plans, but initiation of each step is the responsibility of the student. A chart summarizing various details is in the front of this bulletin for reference.

Admission: Admission to a degree program is based on two types of criteria: (1) academic promise, as shown by scholastic success in previous accredited college work, scores on standardized tests, personal interviews with the student, statements from individuals who have knowledge of the student's ability. (2) appropriateness of background for advanced study in the area as shown by the pattern of course work completed previously and statements certifying practical experience. Once the student has been admitted to the program, it is the University's intention to provide aid in progressing toward the degree, while at the same time evaluating the students' progress. In certain cases, progress checks may show that it is desirable for the student to modify the plan or discontinue his or her program.

Program Plan: Requirements for each program are outlined in this bulletin; the student should study them and plan a schedule accordingly. At the first enrollment, each student will make a program plan sheet with the adviser; this may be revised subsequently but should serve as a guide to each enrollment.

Examinations: A qualifying examination, generally prior to or as a part of degree candidacy, may be required in specific degree programs.

Registration for Classes: Ordinarily, there is a preregistration for each term approximately six weeks in advance. A day or two at the beginning of each term is also set aside for registration. The student should carefully check the proposed program against the program plan; the adviser's signature is required for each registration.

Periodic Evaluation of Scholastic Standing: At the conclusion of each term, an evaluation of scholastic status will be made according to the following schedule:

<i>Scholastic Status at Beginning of Term</i>	<i>G.P.A. for Term</i>	<i>Cumulative G.P.A.</i>	<i>New Scholastic Status*</i>
Full	3.00-4.00	3.00-4.00	Full
	0-2.99	3.00-4.00	Full
	0-2.99	0-2.99	Probation
Probation	3.00-4.00	3.00-4.00	Full
	3.00-4.00	0-2.99	Probation (cont.)
	0-2.99	0-2.99	Drop**

*New status will generally be assigned only when at least six credits have been completed beyond total on which previous status was based.

**Specific reaction from program directors required.

Periodic Review of Professional Promise: Because scholastic achievement is only one factor in professional success, the program director may arrange for the staff who have had appropriate contact with the student periodically, to review his or her professional promise. Especially in cases where such professional promise is questioned, the program director and appropriate faculty will discuss an improvement program with the student. Certification for degree candidacy and graduation may involve evaluation of this kind in addition to scholastic attainment.

Degree Candidacy: Degree candidacy is a means of defining the student's total degree plan and evaluating progress toward that goal. Full-time students will apply for degree candidacy by the end of their first term of enrollment. Part-time students will apply when six credits of graduate work at Stout have been completed. Candidacy application forms and specific directions are available in the Graduate College office. Candidacy is applied for by the student, recommended by the program director and awarded by the Graduate College.

Research Project: Each degree program requires each individual student to complete an approved creative intellectual inquiry experience. The student should confer with his or her adviser early in the program to allow ample time for approval by the Graduate College and preparation for completion of an appropriate project.

Transfer of Credits: A student planning to transfer graduate credits from another institution to a program here should check with his or her adviser in ad-

vance concerning applicability of the proposed work. A form (104-0124) to request transfer is available in the Graduate office. Transfer of credits is made only after admission to degree candidacy and is always based upon receipt of official transcripts showing completion of the credit requested.

Intent to Graduate: Students are awarded degrees at the end of the first and second semesters and the summer session. Students planning to finish degree requirements within a given term should file a Graduate Application for Degree card available in the Graduate office.

Graduation Ceremonies: A graduation ceremony is held at the end of each semester and the summer session. Instructions for graduation may be picked up at or requested to be sent from the Student Services office by persons who have filed a Graduate Application for Degree card.

Date of Record of Graduation: Graduate students will be recorded as having graduated in the academic term in which all degree requirements are completed, including the filing of the signed and approved copy of the Creative Intellectual Inquiry Experience Report in the Graduate office. The academic terms are defined as being over on the last day of Semester I in December; the last day of Semester II in May; and the last day of Summer Session in August. Graduate advisers who supervise reports will need adequate lead time for reading both prior to and after final typing of the report. Students should inquire of their adviser about appropriate lead time to permit adequate adviser review prior to the planned completion date.

Award of the Degree: After all grades and credits have been recorded (usually from four to eight weeks after the end of each semester or summer session), the student's transcript will be checked to determine that program requirements have been met with an overall grade point average of at least "B" (3.0). The student will be mailed the diploma and, if requested, a complete transcript certifying his or her degree. Students needing such certification for salary purposes prior to the official statement may request a letter from the assistant dean for Graduate Studies and Curriculum.

ACADEMIC INFORMATION

Academic Calendar Year: The University's academic year is divided into two semesters. Each semester is also divided into two nine-week quarters. The student should recognize that the Stout designation of a quarter represents only one-half a semester and should not be confused with the quarter system in many universities which is 12 weeks in length. Courses scheduled on the quarter basis at Stout meet twice as often each week as courses scheduled on the semester basis for the same credit. Credit hours are awarded on a semester credit hour basis for courses scheduled on either basis.

The Summer Session: Each year, Stout offers a summer session approximately 10 weeks in length. The regular eight-week summer session begins about the second week in June. A two-week pre-session may also be available. Stout is also offering courses within and before the regular eight-week session of varying lengths of time so that a combination of one, two, three or five week courses may be taken.

Credits may be earned at the rate of one semester hour per week of attendance. This makes it possible to earn as many as 10 credits during a summer if attendance is for the entire 10-week summer session. Because of the large number of graduate students in attendance during the summer, many of the graduate level courses are offered each summer. The Summer Session Bulletin is published each April. It contains complete information about offerings, class schedules, enrollment procedures, degree programs and housing. Upon request to the Director, Summer Session, a copy will be sent.

Grading System: The Graduate College uses a seven-step grading plan.

<i>Grade</i>	<i>Grade Point Value</i>	<i>Description</i>
A	4.0	Exceptional achievement at the graduate level
B+	3.5	Above average graduate level work
B	3.0	Average graduate level work
B-	2.5	Below average graduate level work
C	2.0	Acceptable but less than expected graduate level work
D	1.0	Questionable graduate level work
F	0.0	Failure

No student may use the "S" (Satisfactory) or "U" (Unsatisfactory) system or Pass/Fail system for any course in a graduate program.

An "incomplete" may be given for failure to complete course work due to absence over which the student has no control. Incompletes not cleared within a year after the course would normally have been completed are sent to the appropriate department for change of grade. If the grade is not changed, the "I" is changed to "F"; to receive credit after that time, the student must re-register for the course.

The grade "IP" (In Progress) may be given for research papers, theses, independent study, internship and field experience. This grade indicates that the student has been in regular attendance but that additional time is required to complete course requirements. If the "IP" is not removed within two years, the student must re-register for the course.

Textbooks: Graduate students may supply their own textbooks. These may be purchased in the bookstore located in the Memorial Student Center or elsewhere as chosen by the student. An excellent Rental Resources Library is maintained, where graduate students may rent texts.

GENERAL POLICIES

The following policies apply to all graduate programs at Stout (with a few exceptions noted):

Number of Credits Required: A master's degree program will require at least 30 semester credits. An Education Specialist program will require at least 36 semester credits beyond credits completed in the master's degree.

Credits Required in Courses Open Only to Graduate Students: All master's degree programs will require at least 15 credits in course work open only to graduate students; Education Specialist programs require at least 18 credits in this level of course work. In the University of Wisconsin System, such courses carry numbers between 700 and 899.

Time Limits: All credits toward a degree, including transfer credits, must be completed within the seven years prior to the awarding of the degree.

Optimum Credit Load: Graduate students may take a maximum of 16 credits a semester. Students with half-time assistantships are limited to a maximum of 12 credits a semester; quarter-time assistants are limited to a maximum of 14 credits a semester. During the summer session, the maximum credit load is one semester credit per week.

Graduate students enrolled at Stout who plan a concurrent enrollment at another institution of higher education are required to inform the Graduate College in advance. In such enrollments, the total credit load is subject to the limitations described above.

Transfer Credits: In general, a maximum of nine semester credits may be transferred to a UW-Stout master's degree program from any accredited graduate school. In appropriate cases, as many as 15 semester credits may be transferred if earned from one of the institutions in the University of Wisconsin System. Such credit by transfer, to count toward a degree, must be judged by the program director to be appropriate as a required or elective course. Students who have been admitted to a program should get approval of the program director prior to taking such work. Any courses to be transferred must be clearly identified as having been taken for graduate credit. Transfer work may be earned either through on-campus or through extension attendance.

Continuing Education: Graduate course work beyond the required 15 Stout residence credits may be earned through Stout's Continuing Education program. That office offers a wide range of work, including graduate only (700-899 level) and other appropriate work awarded graduate credit. The student should consult the program director relative to appropriateness of such work for meeting the requirements of the program.

Correspondence Work: No credit toward a graduate degree will be allowed for correspondence work.

Evaluation for Retention: One measure of retention is earning a grade point average of at least 3.0 for the master's and 3.25 for the Ed.S. degree on all work needed to fulfill the degree requirements. Another measure of retention is through evaluation by the program director of the student's demonstrated potential for success in the field. In cases in which a student is recommended to be dropped, he or she shall have opportunity to be heard before such action is taken.

Petitions: In cases where exception to these policies or other regulations seems justified, a student may petition. Specific requests for exceptions to Graduate College Policy may be presented in writing on Form 104-0132 available in the Graduate Office. Such requests should be accompanied by a rationale which clearly states the compelling reasons which may justify exceptional consideration. Such requests, although addressed to the dean, are submitted in writing to the appropriate program director who makes his/her recommendation and forwards it to the Committee on Exceptions to Graduate Policy for further consideration. Notification of action on requests for exceptions to Graduate College Policy is ordinarily received by the student from the appropriate program director. For "student rights and responsibilities," please see the current edition of the Stout Student Handbook.

EXPECTED OUTCOMES OF THE GRADUATE RESIDENCY EXPERIENCE

Residence for purposes of graduate experiences refers to those experiences offered on campus and includes those experiences supervised or taught off campus by the resident faculty as part of their contractual load. As used in this sense, it is not related to the resident status for financial purposes based upon whether one is a resident of the state.

Among the traditional tools for maintenance of quality in graduate programs is the requirement for a period of full-time residence in the University community. The period of residency is expected to permit the following:

Peer Group Interaction: The student, during this period, has an opportunity to interact with a group of graduate students from diverse backgrounds who are engaged in the common pursuit of intellectual maturity, leadership capability and professional competence.

Professional Role Models: During this period, the student has an opportunity to observe the practices and attitudes of a number of scholarly role models. Techniques of interpersonal interactions, professional approaches and attitudes toward the disciplines may be observed. While other role models are readily available in professional settings, the scholarly role model may be less easily accessible outside of the University community.

Opportunity for Reflection and Integration of Knowledge: The process of achieving intellectual and scholarly maturity may be facilitated by the provision of adequate time for reflection and self-analysis. Ideally, the period of residency would provide a time during which the student is less committed to the objective requirements of employment and career development, and permit focus of attention on personal and intellectual development.

Access to Facilities: For certain graduate learning experiences, access to laboratory facilities, to the expertise of personnel, to adequate library facilities and ready access to program and research advisement is necessary.

Evaluation: This period provides an opportunity for observation and evaluation continuously over a period of time, of the student's growth and capability. These observations and evaluations are made by several faculty members who are experienced evaluators of graduate students. The extended observation, the participation of several independent observers in the evaluation and the criteria established by individual faculty members after repeated interaction with a number of graduate students are important components of this evaluation process.

Social Interaction: The opportunity for interaction in an informal setting is provided for in a variety of informal settings by the University community.

Conferences, workshops, dances, picnics and homecoming activities are a few examples of activities that provide an opportunity for graduate students to interact informally with each other, faculty and staff. This provides both the student and faculty the opportunity to enrich themselves through informal interaction with each other.

Quality Course Work: The content, evaluation, standards and apparent effectiveness of learning experiences offered by regular members of the faculty on campus are potentially subject to continuous scrutiny by colleagues in the department. At initiation, as well as at other times when change is recommended, proposals for courses are examined by the University-wide curriculum committee and the Graduate Council. This opportunity for extended professional consideration provides a nurturant atmosphere for the continuous development and improvement of excellent graduate learning experiences. Opportunities for integrating a variety of learning experiences which are complementary to the program are provided. Such professional interaction is characteristic of the scholarly community, and may be expected to enhance, over time, the quality of learning experiences offered by members of the regular University faculty.

Residence Requirement: Students may choose either of the following two options to meet the minimum graduate residency requirement. (Individual program policy may dictate additional requirements.)

Residency option 1: One term of residence in which at least six credits are earned on the Stout campus excluding the six credit thesis or the field study.

Residency option 2: Completion of a series of intensive, structured graduate seminars designed to meet expected outcomes of residency experiences. Stu-

dents desiring this option should consult with their program director to determine the time and location of these seminars.

EXPECTED OUTCOMES OF LEARNING EXPERIENCE APPLIED IN THE IMMEDIATE PROFESSIONAL SETTING

Traditionally, graduate education in the United States has been tightly controlled and offered entirely on campus. However, Stout has demonstrated that, with appropriate supervision, excellence can be maintained while integrating practical professional learning experience into the graduate program. Such learning experiences may be offered either on- or off-campus and are expected to permit the following:

Application of Principles and Processes: Students combine theory and practice through direct application to existing work settings. This brings realism to the principles and processes that may not be so easily seen in an academic residency setting. The problems which may be studied are likely to be those in need of solution.

Synthesize Theory from Practice: It would seem more likely that students studying in the professional setting would have experiences which synthesize theory from practice than would be the case if the examples were provided away from the professional setting.

Teacher-Practitioner as Role-Model: Carefully chosen faculty for such learning experiences provide desirable role models of the professional in action. Attitudes of the faculty toward service, toward professional associations and toward other disciplines may be observed.

Facilities: In some cases, facilities in professional settings may be more extensive and more up to date than would be possible within a college or university. Resources may be unique to certain professional settings.

Evaluation: Evaluation in the professional setting is potentially reliable. The student-practitioner is close to the day-to-day realities of given problem settings. Some students may be more comfortable to be evaluated in the professional setting.

Promotes Ease of Transition to Professional Careers: Students who have studied in professional settings are more likely to move easily into that professional setting. Excellence in performance in the professional setting often alerts employers to excellent prospects for employment.

Students should consult with their program director for the experiences in their program which may be applied in the immediate professional setting.

INDEPENDENT STUDIES PROGRAM

Students may design special topic courses for credit through the University's independent study program. This program is open to students only during any enrollment or course-add period. Summer session enrollments are closed at the end of the fifth week of the eight-week session. Students may initiate the process by obtaining an application for independent study from the office of the assistant dean of the school in which this independent study is to be offered. The student selects a topic and completes the form. After a topic area has been selected and approved by the appropriate department chairperson, a member of a Stout department is appointed study coordinator. Credits are awarded on the basis of expending a minimum of 48 hours of effort for each credit and on an evaluation of the extent to which the stated objectives were met. Independent study topics are those not offered through existing courses. Approved independent study courses are completed by the student in consultation with the assigned independent study coordinator who provides counsel and aid to the student in achieving the approved desired learning objectives.

Students should consult in advance with their program director to find out whether the proposed independent study may be used in the degree program.

FIELD EXPERIENCE PROGRAM

Students in some graduate programs are encouraged to obtain part of their education program off the Menomonie campus through a special graduate level Field Experience program. This program allows a graduate student to receive academic credit for off-campus experiences and study relating to his or her program while employed in an approved field position. The graduate level part of the program has been specifically designed to aid in-service teachers, counselors and administrators in using summer work experience or supervised observation of business and industry to benefit their performance when they return to their jobs in the fall. Increased time credit towards vocational certification is possible in many situations for students employed in positions relative to their teaching field and enrolled in Stout's Field Experience program.

All necessary forms and reports can be handled by mail and a person enrolled need not be on campus. Application must be made prior to beginning work. Further information and application forms may be secured by contacting the office of the school dean in which school the course is offered.

CREDIT BY EXAMINATION

Several procedures permit students to demonstrate their competence through examinations. Credit by examination is possible by "Test Out" procedures developed by various Stout departments. Students testing out of a course will be charged a testing fee.

RESIDENT STATUS OF GRADUATE STUDENTS FOR TUITION PURPOSES

Adult students who have been bona fide residents of Wisconsin for 12 months immediately preceding enrollment in the University are considered to be resident students for tuition purposes.

(In determining bona fide residence, **intent** to establish and maintain a permanent home in Wisconsin is determinative. The burden of proof is on the student but intent may be demonstrated or disproved by factors including, but not limited to, filing of Wisconsin income tax returns, possession of a Wisconsin operator's license, place of employment and self-support.)

The following categories of students are also considered to be residents for tuition purposes:

Non-resident members of the armed forces and persons engaged in alternative service who are stationed in this state for purposes other than education and their spouses and minor children during the period such persons are stationed in this state.

Any student who is a graduate of a Wisconsin high school and whose parents are bona fide residents of this state for 12 months preceding the beginning of any semester or session for which the student registers at the University or whose last surviving parent was a bona fide resident of the state for 12 months preceding death. Note that this applies to both minor and adult students.

FEES

Graduate fees are set by the University of Wisconsin Board of Regents and are subject to change. Fees for graduate students registered for nine or more credits for fall semester 1983 are:

Wisconsin Resident: \$679.50 per semester

Minnesota Resident: \$628.00 per semester

Non-resident: \$1,979.00 per semester

Part-time graduate students are those carrying eight and one-half (8½) credits or less in the regular session, and those carrying five or fewer credits during the eight-week summer session.

Split program students (eligible undergraduates carrying graduate work simultaneously) pay the applicable undergraduate fee. Any expense incurred by the graduate during the conduct of research problems—such as the printing of questionnaires and maps, typing, thesis binding, etc.—is the responsibility of the student.

Refunds: Semester Basis

100% for the first week

80% second week

60% third week

40% fourth week

0% fifth week and thereafter

In determining withdrawal date, the University uses the date the student notifies the school of the withdrawal; or if the student fails to notify the school and is otherwise unable to verify date of withdrawal, the date of the request to refund will be used to determine the refund.

Students who enter military service by enlistment, or otherwise, shall receive either a full refund of fees or receive course credits for the term. Other exceptions to the above may be made upon approval of the Chancellor and the designated Board of Regents representative.

Minnesota-Wisconsin Tuition Reciprocity Agreement: An agreement between the states of Wisconsin and Minnesota permits residents of either state to attend higher education institutions in the other state at the same tuition rate as their home state.

To be eligible under this agreement, a student must file an application prior to or during the term or semester in which he/she expects to first receive the waiver of the non-resident portion of tuition. A student is deemed to meet this application date requirement if his/her completed application is postmarked no later than the last day of scheduled classes. A term or semester is deemed to run through the last day of scheduled classes as published in the academic calendar of the institution. Neither the Minnesota Higher Education Coordinating Commission nor the University will be financially liable for students enrolled under the reciprocity agreement who have not received prior approval and certification by the Minnesota Higher Education Coordinating Commission, Suite 400, Capitol Square, 500 Cedar St., St. Paul, Minn. 55101.

Students certified for the academic year are also covered for the following summer session. A new application must be filed each year.

FINANCIAL AID

Several kinds of financial aid are available to eligible graduate students who meet all entrance requirements. Some of these aids provide an opportunity for desirable professional experience as well. Application for assistantships should be filed in the office of the Graduate College. Those who file by April 15, preceding the academic year of planned attendance have the best opportunities for being offered an assistantship. Eligibility for these assistantships requires admission to a graduate degree program (split-program students are not eligible) and that the student carry a minimum load of at least 6 graduate credits. Conditions for assistantships and other aids are subject to change. Aid received through the Financial Aid office are based on need. All awards will be adjusted so as not to exceed the determined need.

Graduate Non-teaching Assistantships provide stipends in return for a designated amount of professional service related to the student's program.

Graduate Teaching Assistantships provide stipends in return for time spent teaching a laboratory or discussion session.

Assistantships range from $\frac{1}{8}$ to $\frac{1}{2}$ time. The stipend for a one-half time assistantship for 1984-85 is \$5,020.

Graduate students from states other than Wisconsin and Minnesota, who hold assistantships of $\frac{1}{2}$ time or more and who are employed by Stout on an assistantship, upon application, may be awarded a partial or full waiver of the nonresident portion of tuition. Nonresident tuition waivers are subject to availability of funds. Students with a waiver for two consecutive semesters may also receive the award of a tuition waiver for the regular summer session. Nonresident tuition waivers are limited to the difference between resident and nonresident tuition. International students are not ordinarily awarded these waivers. They may be eligible for an international student nonresident tuition waiver.

The graduate student's scholastic load is limited during the term(s) of the assistantship.

The Financial Aid office administers financial aid funded primarily from state and federal resources. Application for aid should be filed in the office by April 15, preceding the academic year, or March 1, preceding the summer session.

All applicants must complete a Stout Financial Aid Application and a financial statement which is used to calculate financial need. The office awards aid in the form of grants, loans or work. Eligible students may receive one or a combination of these depending on a student's financial need.

The following programs are administered by the Financial Aid office. For a complete listing of the aid programs and their eligibility criteria, contact the office.

Advanced Opportunity Grants are available to a limited number of minority/disadvantaged students. Preference is given to Wisconsin residents. The amount of the award varies but is generally the amount of resident fees.

Guaranteed Student Loans (GSL) are available through private lenders (banks, savings and loan associations, and credit unions). Wisconsin State Student Loans (WSL) are available to Wisconsin residents. The maximum amount a graduate student may borrow is \$5,000 per academic year. The loan is interest free until six months after graduation, termination of university attendance or change in enrollment status to less than half-time. Interest of eight percent is charged during the repayment period up to 10 years. Applications are available at participating lending agencies for GSL's or in our office for WSL's.

National Direct Student Loans (NDSL) are available to graduate students if their primary source of borrowing as an undergraduate has been this program. The maximum amount that can be borrowed including undergraduate work is \$12,000. The loan is interest free until six months after graduation, termination of attendance or change in enrollment status to less than half-time. Interest of five percent is charged during the repayment period of 10 years.

Parent Loans for Students (PLUS) are available to graduate students through participating lenders (banks, savings and loan associations, and credit unions). The maximum amount a graduate student may borrow is \$3,000 per academic year, \$15,000 total. Repayment begins 60 days after the loan is negotiated at 12 percent interest. Applications are available at participating lending agencies.

International Student Tuition Waivers are available to international graduate students who demonstrate need, high academic achievement and are recommended by a program director. This award consists of remission of all or part of one to two semesters of the nonresident portion of tuition. Applications are available at the Office of International Students and the Financial Aid office.

Stout Foundation Scholarships are available through the Foundation office. The scholarships vary in amount and awarding criteria.

College Workstudy Program provides job opportunities on campus. Under this program students earn an hourly wage up to a yearly earning limit determined by the office.

University (State Payroll) Employment Program students earn an hourly wage as determined by the Stout employing department.

Residence Hall Positions: Opportunities are available to graduate students to serve as a resident adviser on a floor community or as an assistant head resident of a hall. Resident advisers receive remuneration in the form of room and board. The assistant head resident position is a salaried one. Application for both positions should be made to the Housing office in the basement of North Hall.

Vocational Rehabilitation: Traineeships may be available for qualified students in the Vocational Rehabilitation program. A traineeship provides a stipend and one-half of the student's tuition for a maximum period of one year. Priority is given to minorities, handicapped or persons with one year or more evaluation or adjustment experience.

International Student (Non-Resident Tuition Waiver): Awards may be made to students from other countries based on scholarship and a recommendation from the program director. Awards are subject to the availability of funds. Awards will be made only after admission to the Graduate College has been granted. Students must be enrolled as full-time graduate students to receive this award. Interested students should follow all degree application procedures as well as filing an application for the International Student Nonresident Tuition Waiver with the Financial Aid office. The application deadline is May 1 with awards announced about June 1. Applications received after May 1 will be considered only if additional funds become available.

OFF-CAMPUS PROGRAMS

Continuing Education Program: The University offers a program of evening and Saturday morning classes as well as off-campus credit offerings. Registration for these courses is completed at the first class meeting. Textbooks required for the class by the instructor are made available for purchase at the first class meeting.

Course numbers, titles and content are the same as those offered on the University campus. To be awarded graduate credit for extension work, the student must be admitted to the Graduate College.

HOUSING INFORMATION

The University maintains residence halls for approximately 2,900 students, both graduate and undergraduate. Reservations for the residence hall system are made on a "first come, first served" basis with most of the assignments completed by March.

A \$75 room deposit is required on all room reservations. The deposit submitted with the residence hall application will be applied against the final payment for the second semester. The deposit will be forfeited if cancellation is received after May 15. Rooms may be occupied the day prior to registration each semester. The contract is valid for the entire academic year.

Freshmen and sophomores comprise approximately 70 percent of the residence hall populations. Graduate and undergraduate students are integrated into the residence hall system; however, the University does attempt to honor roommate requests.

Each room is furnished with two single beds and innerspring mattresses, dressers, study tables, chairs and bookcases. It is suggested that students not bring additional furniture. The rooms are approximately 11' x 15'. Radios, stereos and television sets are permitted in the rooms provided the students comply with the regulations for the use of this equipment. Television sets are also available for general use in the main lounge of each building. Small refrigerators are available on a rental basis.

Students living in residence halls are required to contract for their meals in the dining service facilities as provided. The meal contract plan provides various options. Cooking in student rooms is not permitted.

Graduate students may choose to live in off-campus housing. The University attempts to maintain a list of off-campus housing currently available. Another source of local housing information is the local newspapers: Dunn County News, 710 Main St.; Dunn County Reminder, 2219 S. Broadway; Leader-Telegram, 719 Broadway, all in Menomonie, Wis. 54751.

Those planning to reside off campus may find it useful to visit Menomonie to search for the type of housing desired.

The Stout Student Association office maintains a current list of off-campus housing.

STUDENT SERVICES

Office of International Programs Stout has a major commitment to international programs and international students. Special services are provided for international students. These services include confidential counseling and advisement on immigration matters, financial problems, academic questions, social customs and personal concerns, orientation of new international students, and problem-solving and liaison with other university offices and with commu-

nity groups and businesses. The Office of International Student Services also works with the community organization, Friends of International Students, to coordinate the host family project and other community programs of benefit to international students.

University Counseling Center: A Counseling Center and Biofeedback Laboratory serves both training and service functions by providing guidance, school psychology, marriage and family therapy, and vocational rehabilitation practicum opportunities, a resource center of guidance materials and equipment, and a wide variety of counseling and personal development opportunities.

Health Service: The University maintains a Student Health Service located at the extreme north end of the campus. The Health Service is open from 8 a.m. to 4:30 p.m. A physician is on duty from 9 a.m. to noon and 1 p.m. to 4:30 p.m., Monday through Friday during the academic year. Standard examining and laboratory facilities are available. The Health Service is supported by a student health fee. It is not open during the summer session.

Services for Students with Disabilities: A variety of services, specialized equipment and information on accessibility is available for handicapped students. Students who may require specialized services are asked to contact the office as soon as possible before beginning classes. The office is located in the Administration building.

Recreation: Recreation facilities include the Health and Physical Education building, Nelson Field and 10 outdoor lighted tennis courts. Stout offers open recreation, intramurals and physical education instructional classes. The building provides courts for tennis, badminton, volleyball, basketball and archery, as well as individual rooms for weight training, gymnastics and dance. A swimming pool is also located in this building.

Lake Menomin, within the city, offers the finest in fishing, swimming, boating, canoeing and water skiing. Similar opportunities are available on the nearby lakes. Ski enthusiasts will find excellent opportunities within commuting distance. Game hunting (bird and deer) opportunities are to be found in the immediate vicinity. The Menomonie Country Club and the Tanglewood Golf Course have a nine-hole golf course.

Veterans Service: Special assistance is given veterans by the Registrar. This office provides veterans with current information on veterans affairs and maintains liaison with the Veterans Administration, Department of Veterans Affairs and the County Veterans Service Officer.

Parking: Parking facilities on or near the campus are limited. Students who expect to use University-owned or controlled parking lots must register their vehicles and observe the regulations issued by the Security office. Limited parking adjacent to the residence halls is available to those living in them. The City of Menomonie has restricted parking ordinances which limit street parking both day and night.

Career Planning and Placement Services: Graduate students are strongly encouraged to register with the Career Planning and Placement office prior to the receipt of their degree. Registration should be completed even though a graduate student is returning to a job, continuing their education or are employed at the time of graduation. Registration is part of the graduate students checkout procedure prior to receipt of degrees.

The Career Planning and Placement Services office is maintained to provide service for seniors, graduate students and alumni. The goal of the office is to provide effective support to the placement efforts each individual makes in securing the best position. Effort is made to bring to the attention of candidates information about vacancies, trends in supply and demand, data about salaries and conditions of employment, and to recommend effective application techniques. Career development and midlife career counseling assistance is also available. Students are encouraged to attend group seminars or meet individually with a placement counselor.

There is no charge to students for any service provided by the Career Planning and Placement Services while they are enrolled for more than two credits and in the process of seeking a position. However, there will be a \$25 late processing fee for all graduates who wish to use these facilities and services if they do not establish their credentials in the Career Planning and Placement Services office prior to graduation.

Graduate students are invited to establish a placement file and to make use of these facilities and services when they are within one semester of meeting the requirements for graduation.

Child Care Service: Child care services are available at the Child and Family Study Center during the academic year. This Center provides services to children as well as a practicum experience for children from birth through six years of age. The infants' and toddlers' program meets two hours per week. The Day Care program, which serves children three through six years of age, operates from 7:30 a.m. to 5 p.m. daily, Monday through Friday. All other programs are limited to a 2½ hour block per day. Additional information on the programs, enrollment and fees can be obtained by writing the Director of the Child and Family Study Center, School of Home Economics, University of Wisconsin-Stout.

DEGREE PROGRAMS

SCHOOL OF INDUSTRY AND TECHNOLOGY

Dr. M. James Bensen, Dean
Dr. Donald G. Chatman, Assistant Dean
Dr. John F. Entorf, Assistant Dean

INDUSTRIAL EDUCATION

Dr. Richard F. Peter, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. William D. Amthor, Professor	Dr. Frank R. Pershern, Professor
Dr. Thomas Baldwin, Professor	Dr. Richard F. Peter, Professor
Dr. M. James Bensen, Professor	Dr. Arnold Piersall, Professor
Dr. James Bjornerud, Professor	Dr. Neal W. Prichard, Professor
Dr. James A. Collier, Professor	Mr. Charles F. Rhoads, Associate Professor
Dr. John F. Entorf, Professor	Dr. Joe A. Rinck, Professor
Dr. Richard H. Gebhart, Professor	Dr. James J. Runnalls, Professor
Dr. Glenn Gehring, Professor	Dr. Jack B. Sampson, Professor
Dr. James F. Herr, Professor	Dr. A. Gary Searle, Professor
Dr. Armand G. Hofer, Professor	Dr. Lee H. Smalley, Professor
Dr. Duane A. Johnson, Professor	Mr. Paul Speidel, Associate Professor
Mr. Harlyn Misfeldt, Associate Professor	Dr. Robert J. Spinti, Professor
Dr. Louis A. Moegenburg, Associate Professor	Dr. Douglas D. Stallsmith, Professor
Mr. Edward O. Morical, Associate Professor	Dr. Leonard Sterry, Associate Professor
Dr. Arthur E. Muller, Professor	Dr. Charles L. Thomas, Professor
Dr. Orville Nelson, Professor	Dr. Henry L. Thomas, Professor
Mr. Courtney Nystuen, Associate Professor	Dr. Hans E. Timper, Associate Professor

Master of Science Degree. This program is especially designed for individuals with undergraduate preparation in industrial arts, industrial education and related fields. However, it is also open to others interested in entering the industrial education field. (See optional program in this section.)

Specifically, the curriculum is designed to provide advanced instruction of value to: (a) secondary school industrial arts teachers, supervisors and administrators; (b) junior college, college and university industrial arts teachers, supervisors and administrators; (c) those desiring knowledge and competence related to American industry and technology education; (d) those who have interest in special student groups such as the disadvantaged, the slow learner, the underachiever, the handicapped and the gifted; (e) those who desire vocational-industrial certification, but do not yet have the work experience and those who want to work in industrial training.

Learning experiences in the immediate professional setting include: apprentice teaching, technical service schools and, for those seeking teaching certification, the human relations requirement.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree in industrial education, technology education (or equivalent) from an accredited college and have an overall grade point average of at least 2.75.

In addition, the applicant should have an undergraduate major in industrial arts education, technology education or its equivalent. This assumes preparation and certification (or eligibility for certification) for teaching industrial arts or technology education.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree. (See Optional Programs in this section.)

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application, degree candidacy and intent to graduate.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or

better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (7-11 Cr.) Credits

190-739	Introduction to Problems in Industrial Education	1
421-740	Research Foundations	4

The following two options are available for the research experience, each involving a research report:

190-735	Problems in Industrial Education	2
190-770	Thesis—Industrial Education	6

Preparation Basic to Program (14 Cr. minimum)

190-704	History and Philosophy of Industrial Education	2
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Select at least one from each cluster:

Cluster 1. Foundations in Philosophy or Psychology

190-532	Futures of Technology	2
190-708	Issues in Industrial Education	2
421-700	Philosophy of Modern Education	2
421-705	Social Thought of American Educators	2
479-730	Advanced Psychology of Learning	2
365-550	Ethical Valuing	2

Cluster 2. Facilitation and Management of Learning

190-533	Shop Planning and Equipment Selection	2
190-606	Learning Activities	2
190-637	School Shop Organization and Management	2
421-715	Teaching Strategies	4
421-640	Educational Sciences	2
xxx-xxx	Graduate Level Computer Course	

Cluster 3. Evaluation

421-641	Educational Evaluation	2
421-742	Program Evaluation	3

Cluster 4. Technical Research

110-798	Problems in Industry and Technology (Energy and Transportation)	2
130-798	Problems in Industry and Technology (Graphic Communications)	2
150-730	Advanced Technical Problems (Industrial Management)	2
170-798	Problems in Industry and Technology (Materials and Processes)	2
600-799	Independent Study in Media Technology	2

Select at least two from this cluster:

Cluster 5. Curriculum and Program Development

190-710	Curriculum Innovation Affecting Industrial Education ..	2
199-647	Adult Education	2
421-750	Curriculum Theory and Practice	2
*190-638	Course Construction.....	2
*600-740	Instructional Development	2
*May take either, but not both.		

Preparation for Further Individual Professional Development

For students planning careers in teaching, it is recommended that their technical work (graduate and undergraduate) total at least 45 semester hours. Additional electives will be selected with approval of the graduate program director. A complete list of graduate work appropriate to this degree program is maintained by the program director.

OPTIONAL PROGRAMS

Persons who hold a bachelor's degree in another field and wish to become certified to teach industrial education while also earning the master's degree may do so in the following programs.

ADMISSION

Prior to full admission to the master's degree program the student must develop an appropriate technical background by completion of the following undergraduate work. (See Undergraduate Bulletin for course descriptions.) Some graduate work may be taken concurrently but ordinarily these undergraduate deficiency credits will take first priority:

		Credits
110-101	Energy in Industry	2
110-201	Transportation.....	2
110-204	Electricity/Electronics Fundamentals	3
130-103	Communication and Information Technology	3
130-110	Drafting	2
130-504	Communication and Information Systems	3
150-514	Industrial Enterprise Practicum.....	3
170-102	Manufacturing-Materials and Processes I	3
170-205	Design for Industry	2
170-270	Light Building Construction.....	2
110-551	Introduction to Microprocessors	3
Total		28

M.S. IN INDUSTRIAL EDUCATION (for those not certifiable for teaching in any field)

Professional Preparation* (16 Cr.)

421-700	Philosophy of Modern Education	2
479-730	Advanced Psychology of Learning	2
421-714	Teaching Strategies	4
421-750	Curriculum Theory and Practice	2
190-710	Curriculum Innovation Affecting Industrial Education ..	2
190-637	School Shop Organization and Management	2
190-638	Course Construction	2

Undergraduate Professional Deficiencies (13 Cr.)

190-408	Student Teaching (or)	
190-488	Internship Teaching	8
421-682	Reading Methods—Secondary School	2
431-630	Main Streaming Special Students	3

*(These 16 credits of professional preparation must be completed prior to student or intern teaching.)

Preparation in Research (7-11 Cr.)

(See previous reference to Preparation in Research for options.)

Preparation Basic to Program (4 Cr.)

190-704	History and Philosophy of Industrial Education	2
Any one course from Cluster 4 Technical		2

Technical Electives (15 Cr.)

Total undergraduate and graduate technical credits in any combination is at least 45 semester hours.

Human Relations Requirement:

The Wisconsin Department of Public Instruction requires preparation in Human Relations for those desiring initial certification for teaching in Wisconsin.

This requirement may be met by any one of the four following means:

1. By submitting documented evidence of past experience.
2. By developing a plan to incorporate appropriate experiences within the degree program.
3. By satisfactory completion of either a non-credit or a credit independent study package.
4. By an approved plan developed from a combination of the above.

A brochure describing the means of meeting this requirement is available from the graduate program director. The student's approved human relations plan must be filed at the same time as the degree candidacy application, and is sub-

ject to approval of the graduate program director and the dean of the graduate college.

Mainstreaming Special Education Students: The Wisconsin Department of Public Instruction requires preparation in teaching special education students for those candidates who complete the certification program after July 1, 1981. This requirement can be met by a course in mainstreaming special education students - or equivalent.

M.S. IN INDUSTRIAL EDUCATION—(for those certifiable for teaching in fields other than industrial education)

Upon completion of the undergraduate technical deficiency, students who are certifiable teachers in fields other than industrial education may enter the standard program for the Master of Science degree in industrial education outlined previously with the stipulation that their programs will include sufficient graduate technical credits so that the total undergraduate and graduate technical credits in any combination is at least 45 semester hours of technical credits.

Student or intern teaching in industrial education (8 undergraduate credits) is required. Note "Teaching Practicum" in the previous section.

Both the human relations and the mainstreaming requirements of the Wisconsin Department of Public Instruction are required for those seeking initial certification in Wisconsin. Note "Human Relations Requirement" in the previous section.

Preparation Through Advisement Patterns (select one)

This program is designed so that at least one of a variety of advisement patterns can be developed within the framework of the industrial education degree programs. Beyond the preparation in research (7-11 Cr.) and preparation basic to the program (14 Cr.) students will choose in consultation with their program director an advisement pattern supporting their work-role/life-role goals and select learning experiences (course work) which will support them in such areas as: industrial or technology education teacher, supervisor or administrator; in elementary, middle-junior high school, senior high school, post high school, college or university, industry or other selected areas.

MANAGEMENT TECHNOLOGY

Mr. Zenon T. Smolarek, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. William Amthor, Professor

Dr. Mehar Arora, Professor

Dr. Tom Baldwin, Professor

Dr. Jerry W. Coomer, Professor

Dr. Ray Hansen, Professor

Dr. John Hunt, Associate Professor

Mr. Stan Johnson, Associate Professor	Dr. Frank Pershern, Professor
Dr. Ray Keil, Professor	Mr. Tim Peterson, Instructor
Mr. Charles Krueger, Assistant Professor	Dr. James J. Runnalls, Professor
Dr. Marv Kufahl, Professor	Dr. Jack Sampson, Professor
Mr. Dean Long, Associate Professor	Dr. Bruce Siebold, Professor
Mr. George Morrison, Assistant Professor	Mr. Zenon T. Smolarek, Associate Professor
Dr. Art Muller, Professor	Dr. Robert Spinti, Professor
Dr. Orville Nelson, Professor	Dr. Doug Stallsmith, Professor
Dr. Wayne Nero, Professor	Mr. Ned Weckmueller, Assistant Professor
Dr. Leland Nicholls, Professor	Dr. Hugh Williamson, Associate Professor
Dr. Thomas Ninneman, Professor	Mr. Charles Yost, Associate Professor
Dr. John Olson, Associate Professor	

This program provides educational experiences that prepare graduates for middle management positions in business and industry. The students select an operational specialty area depending on their professional goals, educational background and available faculty expertise. Operational specialties such as industrial management, construction management, graphic arts, electronics, systems analysis and design, industrial training, and others may be developed.

Learning experiences in the immediate professional setting include: advanced technical problems and the field study experience.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college, have an overall grade point average of at least 2.75 and have the equivalent of two years of appropriate work or military experience.

Prerequisite courses may be prescribed upon evaluation of undergraduate transcripts if the student does not have a strong background in production management, marketing, accounting, engineering economy, statistics, computer programming, personnel management, and in at least four technical areas.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; diagnostic (150-720); degree candidacy and intent to graduate.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better, a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Professional Foundations (12 Cr.)

150-700	Systems Analysis and Design	3
150-710	Seminar in Industrial Operations	2
150-720	Foundations in Industrial Operations*	2
150-740	Introduction to Decision Theory	3
150-760	Corporate Planning	2

Leadership (minimum of 5 Cr.)

150-600	Organizational Leadership	3
150-660	Industrial Management	2
150-750	Organizational Development	3
160-679	Marketing Research	3
160-690	Administrative and Business Policies	3
212-535	Seminar on Self-Growth	2
320-720	Labor and Industrial Relations	2
413-752	Group Dynamics	2
421-830	Educational Administrative Behavior	3
459-717	Occupational Analysis and Information	2
479-570	Assertive Training	2
479-579	Public Relations	2
479-581	Industrial Psychology	2
479-760	Personality	2
479-779	Advanced Public Relations	2
	Other Approved Electives	2-4

Operational Specialty (minimum of 9 Cr.)

The following courses are typical of those taken by students that specialize in industrial management or construction management.

110-581	Principles of Industrial Safety	3
110-583	Voluntary OSHA Compliance	2-3
110-782	Occupational Safety Programming	3
110-587	Human Factors Engineering	3
130-526	Building Construction Specifications	2
130-629	Land Use Planning	3
150-505	Production and Inventory Control	3
150-510	Production Processing	3
150-520	Quality Assurance	3
150-540	Time and Motion Study	3
150-570	Estimating and Analyzing Construction Costs	3
150-650	Introduction to Operations Research	3

150-670	Systems Approach to Construction Management	3
150-730	Advanced Technical Problems - Industrial Management	2-6
170-515	Metallurgy	3
170-537	Numerical Control in Manufacturing	3
	Other Approved Electives.....	0-9

Culminating Integrative Experience (minimum of 3 credits)

150-790	Field Problems**	3
	or	
150-780	Problems in Management Technology	2-4

*A faculty tutor is assigned to guide students' self-development program. Strengths and deficiencies are identified and the student culminates the experience with both written and oral matriculation to candidacy examinations.

**Required of students who do not have a minimum of two year's experience in the area of their operational specialty. May be selected by students who do have a minimum of two year's experience in the area of their operational specialty.

SAFETY

Dr. John Olson, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Jerry Coomer, Professor	Dr. Thomas Modahl, Professor
Dr. John F. Entorf, Professor	Dr. John H. Olson, Associate Professor
Mr. David Kraemer, Assistant Professor	Dr. Jack B. Sampson, Professor
Mr. Charles Krueger, Associate Professor	Dr. C. E. Smith, Associate Professor
Dr. Charles Metelka, Professor	Dr. Willis L. Valett, Professor

Master of Science Degree. This graduate program is designed for flexibility to meet both the personal and professional needs of the student. Through advisement, students may prepare for positions in occupational/industrial loss control and/or safety education.

Instructional efforts are directed to experiences that will provide students the capability to work effectively in their professional setting or to conduct safety research.

Learning experiences in the immediate professional setting include: field problems in accident prevention and loss control, independent study in occupational safety and occupational safety internship.

ADMISSION

To be admitted to this program with full status, the applicant must hold a bachelor's degree from an accredited college with an overall grade point average of at least 2.75. In addition, the applicant must have appropriate academic preparation in an occupational, technical, vocational and/or related area. Prior professional, vocational, industrial/trade or educational experience is recommended prior to enrollment in the program.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree. An individual program of study will be designed by the program director and the student to accommodate the student's needs.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; applicant's goals; program plan; admissions interview; related work experience and intent to graduate.

REQUIREMENTS

The requirements for this degree: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

APPLIED RESEARCH AND DEVELOPMENT

Select One		Credits
150-700	System Analysis and Design.....	3
421-740	Research Foundations.....	4

Select One		
140-770	Thesis—Safety.....	6
140-783	Field Problem in Accident Prevention/Loss Control.....	3

Required Professional Preparation (Select 5-8 Credits)

140-771	Foundations in Safety.....	3
140-781	Risk Management in Loss Control.....	3

140-782	Safety Management	3
140-785	Seminar in Safety	2

Select One

150-600	Organizational Leadership	3
140-575	Behavioral Approach to Accident Prevention	3

Elective Professional Preparation

140-581	Principles of Occupational Safety and Health	3
140-583	Voluntary OSHA Compliance	2-3
140-584	Safety Engineering Standards (Pre-req. 140-583)	2
140-585	Contemporary Problems in Occupational Safety	3
140-586	Fire Protection and Prevention	3
140-587	Human Factors Engineering	3
140-588	Construction Safety	2
140-589	Fleet Safety	2
140-590	Products Liability	2
140-779	Independent Study in Safety	1-3
140-784	Safety Internship	4-6
311-542	Industrial Hygiene	3
300-7xx	Industrial Hygiene Instrumentation	2
320-720	Labor and Industrial Relations	2
140-574	Alcohol and Other Drugs in Accident Prevention	3
140-575	Behavioral Approach in Accident Prevention	3
140-577	Driver Improvement Programs	2
140-578	Traffic and Highway Safety	3
140-580	Driver Education for the Handicapped	2
391-512	Speech Skills for Educators	2
407-560	Audio-Visual Communications	2
407-561	Preparation of Audio-Visual Material	2
413-721	Alcohol and Drug Abuse Treatment Programs	2
413-752	Group Dynamics	2
413-760	Theory and Techniques in Behavior Modifications	2
421-702	Principles of Supervision	2
459-769	Behavior Change Techniques with Handicapped People	2
479-582	Personnel Management	3
479-779	Advanced Public Relations	2

Additional Personal/Professional Development

150-740	Introduction to Decision Theory	3
150-750	Organizational Development	3
160-601	Legal Environment of Business	3
160-690	Administrative and Business Policies	3
190-733	Impacts of Technology	2
199-534	Task Analysis	2
199-674	Adult Education	2
311-553	Environmental Chemistry	2
326-516	Technical Writing for Industry	3
421-685	Psychology of Adult Education	2

VOCATIONAL EDUCATION

Dr. Harold Halfin, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. Thomas C. Allen, Assistant
Professor

Dr. William D. Amthor, Professor

Dr. Mehar Arora, Professor

Dr. Thomas Baldwin, Professor

Dr. James Bjornerud, Professor

Dr. James Collier, Professor

Dr. John F. Entorf, Professor

Dr. Eugene Flug, Professor

Dr. Thomas Franklin, Associate
Professor

Dr. Richard H. Gebhart, Professor

Dr. Glenn Gehring, Professor

Dr. Sandra Gill, Associate Professor

Dr. Douglas Gingrich, Associate
Professor

Dr. Harold Halfin, Professor

Dr. James Herr, Professor

Dr. John Houle, Professor

Ms. Joy A. Jocelyn, Assistant
Professor

Dr. Duane A. Johnson, Professor

Ms. Eleanor Johnson, Assistant
Professor

Dr. Gordon Jones, Professor

Mr. Charles Krueger, Associate
Professor

Dr. Marcia Metcalf, Professor

Dr. Richard Miller, Professor

Mr. Harlyn Misfeldt, Associate
Professor

Dr. Lou Moegenburg, Associate
Professor

Mr. Edward O. Morical, Associate
Professor

Dr. Arthur Muller, Professor

Dr. Orville Nelson, Professor

Mr. Courtney Nystuen, Assistant
Professor

Mr. James Pejsa, Instructor

Mr. George Peltier, Assistant
Professor

Dr. Frank Pershern, Professor

Dr. Richard F. Peter, Professor

Dr. Virginia Peter, Professor

Dr. Arnold Piersall, Professor

Dr. Neal W. Prichard, Professor

Dr. Mary J. Rains, Associate
Professor

Ms. Mary J. Rathke, Associate
Professor

Mr. Charles Rhoads, Associate
Professor

Dr. Joe A. Rinck, Professor

Dr. Jack B. Sampson, Professor

Dr. A. Gary Searle, Professor

Dr. Robert Sedlak, Professor

Dr. Lee H. Smalley, Professor

Mr. Paul Speidel, Associate
Professor

Dr. Robert J. Spinti, Professor

Dr. Douglas Stallsmith, Professor

Dr. Donald J. Stephenson, Professor

Dr. Leonard Sterry, Associate
Professor

Dr. Henry Thomas, Professor

Dr. Mary E. Thompson, Professor
Mrs. Margaret Wiinamaki,
Instructor

Mr. Charles Yost, Associate
Professor

Master of Science Degree. The graduate program in vocational education is designed to increase the professional competence of those who plan to serve in a high school or post high school program as a teacher, coordinating teacher, coordinator, supervisor, local vocational education coordinator or administrator of vocational education.

Learning experiences in the immediate professional setting include: internship, outreach courses and independent study.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

Applicants with undergraduate degrees and certification in the various subject areas of vocational-technical education are generally eligible.

Applicants with appropriate subject matter backgrounds, but who do not have the required professional education will need to complete, for undergraduate credit, at least one appropriate methods course. This should be completed early in the program.

Applicants for the emphasis in local vocational education coordinator (LVEC) must complete, for undergraduate credit, a course in the principles, issues and/or philosophy of vocational-technical education. (Request additional admission information from the program director for the LVEC emphasis.)

Prior to award of the degree, the student must present evidence of the necessary amount and kind of occupational experience as specified by the appropriate state certifying agency.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: application and degree candidacy.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate stu-

dents—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (6-10 Cr.)		Credit
421-740	Research Foundations	4
190-739	Introduction to Problems in Industry and Technology ...	1
199-736	Problems in Vocational Education (or)	2
199-770	Thesis—Vocational Education (or)	6
199-784	Internship—LVEC (for LVEC only)	4-8

Preparation within Program (select one concentration)

Concentration in Teaching (20-24 Cr.)

199-502	Principles of Vocational, Technical and Adult Education	2
479-730	Advanced Psychology of Learning	2
Select one:		
421-700	Philosophy of Modern Education	2
421-705	Social thought of American Educators	2
365-500	Philosophy of Technology	3
195-532	Futures of Technology	2
Plus, appropriate courses in teaching/learning process.		

Concentration in Administration (20-24 Cr.)

199-502	Principles of Vocational, Technical and Adult Education	2
479-730	Advanced Psychology of Learning	2
Select one:		
421-700	Philosophy of Modern Education	2
421-705	Social thought of American Educators	2
365-500	Philosophy of Technology	3
195-532	Futures of Technology	2
Plus, appropriate courses in administration.		

Concentration in Local Vocational Education Coordination—(LVEC)
(18-26 Cr.)

This emphasis is the certification program for Local Vocational Education Coordinators in Wisconsin; similar positions exist in other states.

479-579	Public Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2
421-733	Survey Procedures	2
199-560	Cooperative Occupational Education Programs	2
413-691	Theories of Career Development (or)	2
199-710	Coordination	2
421-750	Curriculum Theory and Practice	2
489-753	Psychometric Theory and Application	2
413-737	Curriculum and Methods in Career Education	2

Concentration in Distributive Education (4 Cr.)

196-701	Issues in Vocational Distributive Education	2
196-702	Improvement of Methods and Materials in Distributive Education	2

Preparation for Further Individual and Professional Development

The student should confer with the program adviser in choosing the elective credits to complete the 30-hour degree requirements. There is considerable flexibility in the program with regard to electives, and they may be taken as needed to fulfill the individual goals and objectives of the student. Generally, if appropriate to your goal, electives may be chosen from your technical field (see last paragraph) and from among the following courses:

150-600	Organizational Leadership	3
195-733	Impacts of Technology	2
199-534	Task Analysis	2
199-560	Cooperative Occupational Education Programs	2
199-608	Issues in Vocational, Technical and Adult Education.....	2
199-710	Coordination	2
199-746	Seminars in Vocational Education	2
199-773	Problems in Coordination	2
199-780	Internship in Vocational Education	4-8
199-792	Administration of Vocational, Technical and Adult Education	2
300-700	Current Human Problems	2
320-720	Labor and Industrial Relations	2
326-516	Technical Writing in Industry	3
354-640	Computer Use in Education	3
354-741	Computer Programming Techniques.....	2
387-540	Sociology of Work.....	3
387-575	Sociology of Minority Groups	3
391-512	Speech Skills for Educators	2
413-501	Introduction to Guidance and Counseling	2
421-641	Classroom Evaluation	2
421-670	Conference Leading.....	2
421-681	American Higher Education.....	2
421-702	Principles of Supervision	2
421-705	Social Thought of American Educators	2
421-714	Teaching Strategies.....	4
421-726	Administration.....	2
421-733	Survey Procedures	2
421-739	High School Curriculum.....	2
421-742	Program Evaluation	2
421-750	Curriculum Theory and Practice	2
479-579	Public Relations.....	2
600-560	Audio-Visual Communication.....	2
600-740	Instructional Development	2

Persons preparing to teach will select advanced courses in their subject field. This bulletin lists graduate level technical courses, which are available for graduate credit in certain individual situations. Students are urged to investigate advanced subject matter courses suitable to their particular teaching field; in some teaching areas it may be desirable to transfer them from another institution. However, prior approval to take any course should be obtained.

EDUCATION SPECIALIST DEGREE INDUSTRIAL AND VOCATIONAL ED.

Dr. Harold Halfin, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. William D. Amthor, Professor	Dr. Richard Miller, Professor
Dr. Mehar Arora, Professor	Mr. Harlyn Misfeldt, Associate Professor
Dr. Thomas Baldwin, Professor	Dr. Art Muller, Professor
Dr. M. James Bensen, Professor	Dr. Orville Nelson, Professor
Dr. James Bjornerud, Professor	Dr. Richard F. Peter, Professor
Dr. James Collier, Professor	Dr. Virginia Peter, Professor
Dr. Jerry W. Coomer, Professor	Dr. Arnold Piersall, Professor
Dr. John F. Entorf, Professor	Dr. Neal W. Prichard, Professor
Dr. Wesley L. Face, Professor	Dr. Mary Rains, Associate Professor
Dr. Thomas Franklin, Associate Professor	Dr. Mike Ritland, Professor
Dr. Richard H. Gebhart, Professor	Dr. Jack B. Sampson, Professor
Dr. Glenn Gehring, Professor	Dr. A. Gary Searle, Professor
Dr. Carlyle Gilbertson, Professor	Dr. Lorry Sedgwick, Professor
Dr. Douglas Gingrich, Associate Professor	Dr. Lee H. Smalley, Professor
Dr. Joseph G. Hagaman, Professor	Dr. Charles E. Smith, Associate Professor
Dr. Harold Halfin, Professor	Dr. Robert J. Spinti, Professor
Dr. James Herr, Professor	Dr. Douglas Stallsmith, Professor
Mr. Allan D. Hilgendorf, Associate Professor	Dr. Donald J. Stephenson, Professor
Dr. John Houle, Professor	Dr. Leonard Sterry, Associate Professor
Ms. Joy A. Jocelyn, Assistant Professor	Dr. Charles Thomas, Professor
Dr. Duane A. Johnson, Professor	Dr. Henry Thomas, Professor
Dr. Gordon Jones, Professor	Dr. Mary E. Thompson, Professor
Dr. Louis L. Klitzke, Professor	Dr. Willis L. Vallet, Professor
	Dr. Lawrence S. Wright, Professor

This is a 36 semester credit program beyond the master's degree. Two concentrations are available leading to an Education Specialist degree in industrial

and vocational education, (1) industry and technology and (2) professional education.

The program is for those who have a master's degree in industrial arts, industrial education, vocational education or equivalent. (Equivalency meaning agriculture, business education, distributive education, home economics education, and trade and industrial education.)

Or, the program is for those who have a master's degree and are a certified employee of a vocational-technical institute or a community college.

ADMISSION

Students seeking admission to the program should complete the following at least 30 days prior to the opening of the term in which they plan to begin their program.

1. File an Application for Admission to the Ed.S. program.
2. Submit a current dossier (resume) listing all pertinent biographical and educational data.
3. Present official transcripts of all college and university work completed certifying award of bachelor's and master's degrees in industrial education, industrial arts education, vocational education or an equivalent field with a cumulative grade point average of at least 3.25 on a four-point scale in all graduate work. Persons having master's degrees in other fields who are certified and employed in vocational-technical education are also eligible for admission. Transcripts need not be submitted for work completed at Stout.
4. Provide evidence of at least two years of successful teaching experience and professional promise by requesting letters from at least two administrators or supervisors.

The Education Specialist degree program committee comprised of graduate faculty and an Education Specialist degree student will review the candidate's credentials and make a recommendation relative to admission to the director of the Education Specialist degree program. The committee may recommend that certain standardized examinations be completed or that the candidate be interviewed by the committee. The director of the major will recommend admission with full or provisional status to the Graduate College.

After review of the application data, the Graduate College will:

1. Assign program status and inform the student of it immediately.
 - a. **Full status** will be granted to those who meet all admission requirements.
 - b. **Provisional status** may be granted to those who do not fully qualify on some requirements. At the conclusion of the first term of enrollment, the status will be re-evaluated.
 - c. Admission will be **denied** students whose qualifications do not meet the requirements and if the admissions committee decides provisional status is not warranted.

2. Assign an adviser to assist in developing a degree program and registering for the first term.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: application for admission; degree candidacy and final oral examination.

DEGREE PROGRAM SUPERVISION

For the first enrollment, the student's program adviser will aid in developing a class schedule in keeping with degree requirements. Prior to enrolling for a second term, the student will prepare a total program plan in keeping with degree requirements and the student's special needs.

At that time, the Graduate College will appoint a supervisory committee consisting of three members of the graduate faculty.

The committee will act on the appropriateness of the student's degree program, approve the proposed field study, administer the oral comprehensive examination and recommend the award of the degree.

TEACHING EXPERIENCE

This program is designed for people in education. It is felt that course work will be more significant for those who have some experience in teaching. Thus, no more than eight credits in the degree program may be completed prior to satisfying the requirement of two years of successful teaching experience.

REQUIREMENTS FOR THE ED.S. DEGREE

Prior to the award of the Ed.S. degree, the following requirements will be met:

1. Completion of an approved degree program of 36 semester credits with an overall grade point average of at least 3.25.
2. Filing of an "Intent to Graduate" at least seven weeks prior to the expected graduation date.
3. Completion of a comprehensive examination, written and oral, at least three weeks prior to graduation.
4. Filing of an approved field study report and abstract at least one week prior to graduation.
5. Recommendation for the degree by the supervisory committee.

TRANSFER OF CREDIT

A maximum of 18 semester hours of graduate credit may be transferred to meet the requirements of the Ed.S. degree. It must be appropriate to the degree program and awarded by an institution accredited for graduate level work. All credit to be counted toward the degree must have been completed within seven years of the date the degree is awarded.

RESIDENCE REQUIREMENTS

Students may choose either of the following two options to meet the minimum graduate residency requirement.

Residency Option 1: One term of residence in which at least six credits are earned on the Stout campus excluding the field study.

Residency Option 2: Completion of a series of intensive, structured graduate seminars designed to meet expected outcomes of residency experiences.

TIME LIMITS

All degree requirements, including transferred credit, must be completed within a seven-year period.

CONCENTRATIONS WITHIN PROGRAM

Two concentrations are available within the Ed.S. degree program, they are: (1) industry and technology and (2) professional education.

INDUSTRY AND TECHNOLOGY CONCENTRATION

The Education Specialist degree program in industrial and vocational education—industry and technology concentration at Stout is designed for the graduate student desiring a broad educational experience leading to a professional career as a teacher of industrial and technical subjects in high schools, vocational schools, technical institutes, junior colleges and universities.

Content for the advanced degree program will be drawn from three bodies of knowledge: (a) industry and technology, (b) applied research and (c) professional education. Selection of these three components is based on the assumption that the holder of an advanced degree in industrial education should be a scholar in the discipline (industry and technology), capable of solution of problems through applied research techniques (researcher) and a practicing educator.

CURRICULUM

The Ed.S. degree with a concentration in industry and technology consists of three groups of courses and/or experiences as follows: industry and technology, applied research and professional education.

The industry and technology component consists of courses basic to the science of industry and technology and a field study. This component is intended to be flexible in order to afford candidates an opportunity to broaden themselves if their prior work has been narrow or to study in depth a particular conceptual area of industry and technology if their prior work has been broad in nature. In this component the advanced graduate student will have the opportunity to take additional physics, chemistry, mathematics, sociology, psychology and course work to develop a level of competence in one or two conceptual areas in their substantive teaching field. The impacts of industry and technology, a course required of all students in the program, permits the students to look at how their teaching area has had an effect on people and society. The culminating activity is a field study which is six semester credits of the 18 semester credits required in this component.

The main purpose of the field study is to provide students with an opportunity to apply and synthesize the contents of their program. Education Specialists are encouraged to select practical problems related to their professional appointment, or if not presently employed, to select a problem from their discipline.

The applied research component consists of course work in computer science, research design and procedures, and statistics. A holder of an advanced degree should have an intimate knowledge of research design, measurement and statistics, and a broad background in the problems associated with industrial and vocational education.

The professional education component consists of courses in the foundational areas of education and curriculum and instruction. There is a growing body of knowledge and research dealing with education and the instructional process. It is imperative that the Education Specialist be able to implement current innovative educational practices and thought into the curriculum and the teaching process.

The three components are shown below as they appear in the curriculum requirements for the degree.

PROGRAM PLAN

To qualify for the degree of Education Specialist with a concentration in industry and technology requires that the student earn not less than 36 semester credits beyond the master's degree which will be distributed as follows:

		Sem. Hrs.	Sem. Hrs.	Total
Industry and Technology				16-20
Required:				
195-733	Impacts of Technology	2		
190-890	Field Study in Industry and Technology	6		
Selectives		8-12		
Applied Research				6-10
Required:				
354-741	Computer Programming Techniques	2		
421-816	Instrumentation for Research	3		
Selectives		1-5		
Professional Education				6-10
Required:				
479-850	Psychology of Development	3		
421-811	Structuring Knowledge	2		
Selectives		1-5		

PROFESSIONAL EDUCATION CONCENTRATION

This concentration of the Education Specialist degree in industrial and vocational education has been designed to further the individual who is committed to additional depth in preparation as a professional educator in the areas of curriculum and instruction and the supervision of instruction.

Content for the advanced degree program will be drawn from three bodies of knowledge: (a) professional education, (b) applied research and (c) industry and technology. Selection of these three components is based on the assumption that the holder of an advanced degree should be a practicing educator, capable of solving problems through applied research techniques and a scholar within a discipline.

CURRICULUM

The curriculum consists of three groups of courses and/or experiences as follows: professional education (curriculum and instruction and the supervision of instruction), applied research, and industry and technology.

The professional education component has two sub-components: curriculum and instruction and the supervision of instruction.

Curriculum and instruction involves the advanced graduate student in curriculum engineering, instructional systems, instructional strategies, structuring knowledge, principles of learning, guidance of learning activities, identification and determination of instructional content, and computer assisted instruction as related to industrial and vocational education.

Supervision of instruction involves policy developments, program planning budget systems, cost analysis, cost effectiveness, program evaluation re-

view techniques, accountability in education, decision making models, evaluation systems, improvement of instruction, financial aspects, coordination, leadership procedures, economics in education, management information systems, and management techniques as related to industrial and vocational education. The culminating activity is a field study which is six semester credits of the total (16-20 credits) in this component. The field study provides the opportunity to put into practice some aspect of the program that will benefit both the student and the institutional setting where the student is employed or aspires to be employed.

The applied research component consists of course work in management information systems, instrumentation for research, employment and training research, and planning. A holder of an advanced degree should have knowledge of research design, measurement and statistics and an understanding of problems associated with industrial and vocational education.

The industry and technology component consists of courses in the sciences basic to industry and technology (math, computer science, sociology, psychology, communication and economics) and the impacts of technology on society. The three components are shown below with a listing of the required courses for the program.

PROGRAM PLAN

To qualify for the degree of Education Specialist Professional Education Concentration, requires that the student earn not less than 36 semester credits beyond the master's degree which will be distributed as follows:

		Total Sem. Sem. Hrs. Hrs.
Professional Education.....		16-20
Required:		
421-890	Field Study in Professional Education	6
421-811	Structuring Knowledge	2
Selectives		8-12
Applied Research		6-10
Required:		
421-816	Instrumentation for Research	3
Selectives		3-7
Industry and Technology		6-10
Required:		
195-733	Impacts of Technology	2
479-850	Psychology of Development	3
Selectives		1-5

PREPARATION FOR FURTHER INDEPENDENT AND PROFESSIONAL DEVELOPMENT

The student should confer with the program adviser (chairman of supervisory committee) in choosing elective credits to complete the 36 hour degree requirement. There is considerable flexibility in the program with regard to electives, and they may be taken as needed to fulfill the individual goals and objectives of the student. Generally electives may be chosen from the following:

I. INDUSTRY AND TECHNOLOGY

A. Sciences Basic to Industry and Technology

1. Economics		
320-610	Contemporary American Economic Problems	3
320-615	Contemporary International Economic Problems	3
320-720	Labor and Industrial Relations	2
2. Physics		
372-XXX	Physics Elective	3
3. Sociology		
387-525	Sociology of Leisure	3
387-540	Sociology of Work	3
387-560	Sociology of Juvenile Delinquency	3
387-575	Sociology of Minority Groups	3
4. Speech		
391-508	Speech Skills for Business and Industry	2
391-512	Speech Skills for Educators	2
5. Psychology		
479-850	Psychology of Development	3

B. Science of Industry and Technology

1. Energy and Transportation		
110-614	Transmission and Drive Trains	2
110-660	Fluid Power Systems Design	3
110-702	Recent Developments in Power Technology	2
110-798	Problems in Industry and Technology—Energy and Transportation	2-6
2. Graphic Communications		
130-557	Color Separation	2
130-629	Land Use Planning	3
130-636	Computer Assisted Design Problems	2
130-716	Seminar in Industrial Graphics	2
130-717	Theoretical Foundations for Technical Drawing	3

130-718	Recent Developments in Industrial Graphics	3
130-798	Problems in Industry and Technology	2-6
3.	Industrial Management	
150-500	Engineering Economy	3
150-650	Introduction to Operations Research	3
4.	Materials and Processes	
170-501	Technology—Resources—Environment	2
170-502	Solid Waste Technology	2
170-515	Metallurgy	8
170-506	Maintenance of Processing Equipment	3
170-550	Plastics II	2
170-637	Numerical Control II, Programming for Continuous Path Controls	3
170-713	Wood Properties I: Structure and Characteristics	3
170-715	Plastics Materials and Processes	3
170-798	Problems in Industry and Technology	2-6
5.	Industrial Teacher Education	
190-739	Introduction to Problems of Industry and Technology	1
C.	Impacts of Industry and Technology	
195-733	Impacts of Technology	2
II. APPLIED RESEARCH		
A.	Research Design and Procedures	
421-733	Survey Procedures	2
421-841	Basic Research Design	3
421-816	Instrumentation for Research	3
421-742	Program Evaluation	2
B.	Computer Science	
354-640	Computer Use in Education	3
354-741	Computer Programming Techniques	3
C.	Statistics	
421-761	Educational Statistics	2
421-862	Inferential Statistics	3
421-863	Sampling Techniques	3
III. PROFESSIONAL EDUCATION		
A.	Foundations	
421-700	Philosophy of Modern Education	2
421-705	Social Thought of American Educators	2
479-730	Advanced Psychology of Learning	2
B.	Curriculum and Instruction	
1.	Audio-Visual	
600-732	Planning Media Facilities	2

600-740	Instructional Development	2
600-715	Media Selection	2
600-730	Media Retrieval Systems	2
2.	Guidance	
413-691	Theories of Career Development	2
413-736	American College Student	2
413-737	Curriculum and Methods in Career Education	2
413-750	Appraising the Individual	2
413-752	Group Dynamics	2
413-890	Multiple Counseling and Sensitivity Training	2
3.	Education	
421-714	Teaching Strategies	4
421-750	Curriculum Theory and Practice	2
421-799	Independent Study	2
421-811	Structuring Knowledge	2
4.	Industrial Teacher Education	
190-708	Issues in Industrial Education	2
190-710	Curricular Innovations Affecting Industrial Education	2
190-638	Course Construction	2
5.	Vocational Education	
199-534	Task Analysis	2
199-560	Cooperative Occupational Education Programs	2
199-608	Issues in Vocational, Technical and Adult Education	2
199-674	Adult Education	2
199-710	Coordination	2
199-746	Seminar in Vocational Education	2
199-773	Problems in Coordination	2
199-799	Independent Study	2
199-780	Internship Vocational Education	4-8
6.	Vocational Rehabilitation	
199-717	Occupational Analysis and Information	2
C.	Supervision and Administration	
1.	Education	
150-600	Organizational Leadership	3
150-740	Introduction to Decision Theory	3
150-750	Organizational Development	3
479-579	Public Relations	2
479-779	Advanced Public Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2

421-727	Supervision of Student Teachers	2
421-742	Program Evaluation	2
413-749	Organization and Administration of Student Personnel Services	2
421-830	Educational Administrative Behavior	3
600-740	Instructional Development	2
600-760	Educational Media Administration	2
2. Vocational Education		
199-710	Coordination	2
199-792	Administration of Vocational, Technical and Adult Education	2
199-784	Internship - Local Vocational Education Coordinator (LVEC)	4-8
199-780	Internship Vocational Education	4-8

SCHOOL OF HOME ECONOMICS

Dr. J. Anthony Samenfink, Dean
 Dr. Mary Thompson, Associate Dean
 Ms. Joy Sedgwick, Associate Dean

CLOTHING, TEXTILES AND RELATED ART

Dr. Marcia D. Metcalf, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Donna M. J. Albrecht, Associate Professor	Dr. Marcia D. Metcalf, Professor
Dr. Kenneth G. Heintz, Professor	Dr. Carol H. Siewert, Associate Professor
Dr. Rita T. Mahan, Professor	Dr. Mary Welch, Assistant Professor

Master of Science Degree. The program in clothing, textiles and related art provides an opportunity for development of professional competencies in clothing, textiles, textile design and/or fashion merchandising. It prepares students for professional positions in business, merchandising, industry, or extension services or provides concentrated study for persons planning to teach at the secondary post-secondary or college level. An individualized program will be planned with the program adviser.

A student may choose a concentration in either clothing, textiles, textile design, or fashion merchandising, with electives chosen from an area which will

support the major concentration. Programs for students planning to teach may include courses from two emphases and courses in professional education.

Learning experiences in the immediate professional setting include: national study tour to fashion industry, textile study tour, thesis in clothing and textiles, problems in clothing and textiles, textile design option and field experience.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

In addition to persons with a background in clothing, textiles and related art, students from art, the physical sciences, business and related fields may wish to enter the program. The background preparation required for each concentration is as follows:

Clothing: Students selecting the clothing concentration should have completed basic courses in apparel construction, textiles, principles of apparel design and a design course.

Textiles: Students selecting the textiles concentration should have completed courses in textiles, chemistry, and clothing and textiles industry.

Textile Design: Students selecting the concentration in textile design must have completed a distribution of nine credits in total selected from both textiles and design.

Fashion Merchandising: Students selecting the concentration in fashion merchandising must have had two years experience in a related position or complete three credits each of textiles, management, sales, accounting, marketing and basic retailing.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; student advisement and program plan.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate stu-

dents - 700-800 level; (b) approval for degree candidacy at the appropriate time; and (c) a required course distribution as outlined below.

Preparation in Research (6-10 credits)		Credits
421-740	Research Foundations	4
214-770	Thesis-Clothing and Textiles (or)	6
214-768	Problems in Clothing and Textiles (or)	2
214-769	Clothing and Textiles Design Project	6

Preparation in Professional Core (4 credits)

Choose two of the following:

214-760	Seminar in Clothing.....	2
214-740	Seminar in Textiles	2
214-790	Seminar in Textile Design.....	2
214-730	Seminar in Fashion Merchandising	2

Preparation in Concentration (Select one concentration)

Concentration in Clothing (12-20 credits)

214-566	Apparel Construction-Knit and Stretch Fabrics	2
214-605	European Study Tour.....	3-6
214-610	History of Costume: Ancient to European 1900	3
214-611	History of American Costume.....	2
214-617	Social-Psychological Aspects of Clothing.....	3
214-639	National Study Tour to Fashion Industry	1
214-655	Recent Developments in Clothing and Textiles.....	2
214-666	Tailoring	3
214-680	Draping	3
214-681	Apparel Design-Draping	1
214-682	Apparel Design-Flat Pattern	1
214-765	Workshop in Clothing and Textiles.....	1-2
214-780	Advanced Draping	1
214-781	Advanced Flat Pattern	1
214-799	Independent Study.....	2-4

Concentration in Textiles (12-20 credits)

214-545	Commercial and Household Textiles.....	2
214-550	Textile Evaluation	3
214-590	Practicum in Textile Design (or).....	3
214-592	Practicum in Textile Printing.....	2
214-605	European Study Tour.....	3-6
214-645	U.S. Textile Study Tour	2
214-650	Textile Science	3
214-655	Recent Developments in Clothing and Textiles.....	2
214-693	Structural Design and Weaving.....	2
214-695	Historic and Contemporary Fabrics.....	3
214-755	Topics in Clothing and Textiles.....	1-2
214-765	Workshop in Clothing and Textiles.....	1-2

214-799	Independent Study.....	2-4
245-658	Experimental Laundry Procedures	2
311-521	Textile Chemistry.....	3

Concentration in Textile Design (12-20 credits)

214-590	Practicum in Textile Design.....	3
214-591	Natural Dyeing and Hand Spinning.....	2
214-592	Practicum in Textile Printing.....	2
214-605	European Study Tour	3-6
214-645	U.S. Textile Study Tour	2
214-690	Advanced Textile Design - Stitchery	1
214-691	Advanced Textile Design - Non Loom.....	1
214-692	Advanced Textile Design - Hooking	1
214-693	Structural Design and Weaving.....	2
214-694	Advanced Weaving Studio	2
214-695	Historic and Contemporary Fabrics.....	3
214-792	Advanced Textile Printing	3
304-522, 523, 524, 525, 526, 527, 528, 602, 604		3-6
304-503	Design.....	3
600-504	Elementary Photography	2

Concentration in Fashion Merchandising (12-20 credits)

214-525	Men's-Boy's Merchandise.....	1
214-527	Store Management	3
214-610	History of Costume: Ancient to European.....	3
214-611	History of American Costume.....	2
214-617	Social-Psychological Aspects of Clothing.....	3
214-625	Mass Merchandising.....	3
214-639	National Study Tour of Fashion Industry	1
214-529	Fashion Merchandising Internship.....	6-8*
214-765	Workshop in Clothing and Textiles.....	1-2
214-799	Independent Study.....	2-4
304-534	Fashion Illustration	3
320-720	Labor and Industrial Relations	2
326-515	Technical Writing in Home Economics.....	3
421-702	Principles of Supervision	2
479-582	Personnel Management (or)	3
150-600	Organizational Leadership	3

*Four credits of internship required for those without retailing experience. Persons with retailing experience may not receive more than 4 credits for internship.

Preparation for Further Individual Development (To total 30 credits)

Supporting electives may be chosen from any of the following areas: art, psychology, sociology, economics, management, business, chemistry, administration, communication, vocational education, anthropology and history.

Concentration in Teaching (18-20 credits)

Select at least 12 credits from the individual concentrations above, plus six credits from education.

FOOD SCIENCE AND NUTRITION

Dr. Jacqueline Reddick, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Lorraine Dahlke, Professor
Dr. John C. Deutscher, Professor
Dr. Thomas E. Franklin, Associate Professor
Dr. Terrance Ingram, Professor
Dr. Margaret James, Professor
Dr. Gordon Jones, Professor
Dr. Mercedes Kainski, Professor
Dr. Priscilla Kesting, Professor
Dr. Marvin Kufahl, Professor
Dr. Marian C. Marion, Associate Professor
Dr. David McNaughton, Professor
Dr. Charles Metelka, Professor
Dr. William Mueller, Associate Professor

Mr. George Nelson, Professor
Dr. Leland Nicholls, Professor
Dr. Martin Ondrus, Professor
Mr. Tom Phillips, Instructor
Dr. Mary J. Rains, Associate Professor
Dr. Jacqueline Reddick, Professor
Dr. Mary E. Thompson, Professor
Dr. Mary Ann Townsend, Assistant Professor
Dr. Anita Wilson, Professor
Dr. Gerald Zimmerman, Professor
Dr. Karen Zimmerman, Professor

Master of Science. The goal of this program is to increase professional proficiency, to introduce research procedures and to promote precision in communication. Those who complete the academic requirements for this advanced degree should be able to think more independently and to respond intelligently to challenging ideas. The program prepares students for advanced positions in teaching, dietetics, a wide range of opportunities in business and industry, further education, and can be used as part of the requirements to become a Registered Dietitian. Programs of study are individualized in consultation with the program director to meet the students' needs and goals.

Learning experiences include traditional classes, clinical experience in health care and community agencies, businesses, field trips, laboratory experimentation, thesis, research paper and seminar participation. All students participate in weekly research presentations by faculty and fellow students and are encouraged to present their research at the Annual Graduate Research Day.

ADMISSION

To be admitted to this program with full status, the applicant must have a bachelor's degree from an accredited college or university, with courses in organic and biochemistry, microbiology, physiology, foods and advanced nutrition, and have an overall grade point average of at least 3.0. Applicants with a grade point average between 2.5 and 3.0 may qualify for probational admission.

Students from a variety of educational backgrounds are eligible for admission. In addition to home economics majors, students from the biological, chemical and social sciences will find appropriate applications within the program. Students who do not have a course in European or American foods, will be required to take a beginning foods course as a deficiency.

A deficiency in these admission requirements does not preclude admission, but may necessitate completion of additional undergraduate courses and/or increase the number of graduate credits required to earn the degree.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; degree candidacy; research topic approval and intent to graduate.

REQUIREMENTS

The requirements for this degree include the following: (a) completion of at least 30 semester credits with an overall grade point average of 3.0 or better; (b) inclusion of a minimum of 15 of the 30 credits in courses open only to graduate students—700 level; (c) approval of degree candidacy at the appropriate time; and (d) completion of the research and professional requirements.

Research Preparation (6-10 Cr.)		Credits
421-740	Research Foundations	4
229-770	Thesis in Food Science and Nutrition (or)	6
229-747	Problems in Food Science and Nutrition	2

A concentration may be selected from those below or patterns of advisement developed in consultation with the program director to meet individual needs of the student. All advisement patterns include the research preparation requirements.

Professional Preparation (14-24 Cr.)

Select 14-24 credits from concentration A, B or C, or 20-24 credits from concentration D or E

A—Foods (14-24 Cr.)		Credits
229-620	Food Styling	3
229-638	Experimental Foods	3
229-642	Advanced Foods.....	2
229-661	Social and Cultural Aspects of Food	2
229-701	Trends in Nutrition	2
229-706	Instructional Techniques in Food Systems.....	2
229-708	Food Seminar	2
229-715	Menu Analysis and Planning.....	3
229-720	Workshop in Foods.....	1
229-725	History of Food.....	3
229-730	Recent Developments in Food Science.....	2
229-740	Food Preservation Technology.....	3
229-746	Food Innovations	3
229-756	Advanced Experimental Foods	3
229-799	Independent Studies in Food Science	1
308-506	Food Microbiology	3
311-515	Food Chemistry.....	3
311-535	Instrumental Methods of Analysis	3

B—Nutrition (14-24 Cr.)		
229-606	Nutrition Education	3
229-618	Diet Therapy	3
229-630	Food Behavior.....	3
229-633	Maternal and Child Nutrition.....	3
229-680	Community Nutrition.....	3
229-701	Trends in Nutrition	1-2
229-702	Minerals and Vitamins	3
229-705	Geriatric Nutrition	2
229-710	Clinical Nutrition	3
229-711	Nutrition Seminar.....	2
229-712	Community Nutrition Practicum.....	1-3
229-721	Workshop in Nutrition.....	1
229-729	Proteins.....	3
229-736	Carbohydrates and Lipids	3
229-799	Independent Studies in Nutrition	1

C—Food and Nutrition (14-24 Cr.)

In consultation with the program director select courses from concentrations A and B with a minimum of 5 credits from the concentration of lesser interest.

D—Food and Food Service Administration (20-24 Cr.)

Food (8-10 Cr.)		Credits
229-620	Food Styling	3
229-638	Experimental Foods	3
229-642	Advanced Foods.....	2
229-661	Social and Cultural Aspects of Food	2
229-708	Food Seminar	2

229-720	Workshop in Foods.....	1
229-725	History of Food.....	3
229-730	Recent Developments in Food Science.....	2
229-740	Food Preservation Technology.....	3
229-746	Food Innovations.....	3
229-756	Advanced Experimental Foods.....	3
and:		

Food Service Administration (12-14 Cr.)

150-600	Organizational Leadership.....	3
229-701	Trends in Nutrition.....	1-2
229-706	Instructional Techniques in Food Systems.....	2
245-521	Food Service Equipment.....	2
245-626	Employee and Labor Relations in the Hospitality Industry.....	2
245-656	Microwave Oven.....	2
245-670	Hospitality Industry Financial Analysis, Budgeting and Forecasting.....	3
245-700	Management Concepts in Food Administration.....	1
245-701	Implementation of Management Concepts in Food Ser- vice Administration.....	1
245-702	Operational Controls in Food Service Management.....	1
245-703	Seminar in Analysis of Food Service Management Systems.....	3
354-741	Computer Programming Techniques*.....	2

Those who have not taken 245-501 or 245-513 or the equivalent will be required to take these courses in addition to the concentration requirements.

*Not required of those who have had the undergraduate equivalent experience.

E—Nutrition and Food Service Administration (20-24 Cr.)

Nutrition (8-10 Cr.)		Credits
229-633	Maternal and Child Nutrition.....	3
229-702	Minerals and Vitamins.....	3
229-705	Geriatric Nutrition.....	2
229-710	Clinical Nutrition.....	3
229-720	Proteins.....	3
229-721	Workshop in Nutrition.....	1
229-736	Carbohydrates and Lipids.....	3
and:		

Food Service Administration (12-14 Cr.)

150-600	Organizational Leadership.....	3
229-701	Trends in Nutrition.....	1-2
229-706	Instructional Techniques in Food Systems.....	2
245-521	Food Service Equipment.....	2
245-626	Employee and Labor Relations in the Hospitality Industry.....	2
245-656	Microwave Oven.....	2

245-670	Hospitality Industry Financial Analysis, Budgeting and Forecasting	3
245-700	Management Concepts in Food Administration	1
245-701	Implementation of Management Concepts in Food Service Administration	1
245-702	Operational Controls in Food Service.....	1
245-703	Seminar in Analysis of Food Service Management Systems	3
354-741	Computer Programming Techniques*	2

Those who have not taken 245-501 or 245-513 or the equivalent will be required to take those courses in addition to the concentration requirements.

*Not required of those who have had the undergraduate equivalent experience.

Preparation for Further Individual Development (0-10 Cr.)

Electives are selected according to the candidate's background, interests and objectives. Frequently, courses are chosen from other areas of home economics or from the following fields: business administration, biology, chemistry, economics, education, English, journalism, applied mathematics, mathematics, physics, psychology, sociology, speech, vocational rehabilitation, industrial management and media technology.

HOME ECONOMICS EDUCATION

Dr. Judy Herr, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Jeanette Coufal, Assistant Professor	Dr. Charles J. Metelka, Associate Professor
Dr. Bette Ann Hanson, Professor	Dr. Leland Nicholls, Professor
Dr. Judy Herr, Professor	Dr. Virginia Peter, Professor
Dr. Thomas Holman, Associate Professor	Dr. Gail Roberts, Professor
Dr. Margaret A. James, Professor	Dr. J. Anthony Samenfink, Professor
Dr. Judy Jax, Associate Professor	Dr. Mary Thompson, Professor
Dr. Janice Keil, Professor	Dr. John D. Williams, Associate Professor
Dr. Priscilla Kesting, Professor	Dr. Anita Wilson, Professor
Dr. Rita T. Mahan, Professor	Dr. Karen W. Zimmerman, Professor
Dr. Marian Marion, Associate Professor	
Dr. Marcia D. Metcalf, Professor	

Master of Science Degree. The home economics education program has three concentrations: comprehensive, specialized and certification. Within the comprehensive and specialized concentrations the student may emphasize one or more of the substantive areas of home economics, such as avocational education, child development, clothing and textiles, consumer education, family life, foods and nutrition, home equipment, hospitality, or housing and related art. The comprehensive concentration is for those persons who are in, or wish to prepare for a position which requires knowledge of several or all of the substantive components of home economics. The specialized concentration is for those persons who are in, or who wish to prepare for a position which requires in depth understanding of one of the substantive fields within home economics. The certification concentration is for persons who are not presently certified but who wish to become certified to teach secondary home economics in Wisconsin. Each student's program is individually planned to develop the competencies needed for positions such as elementary and secondary vocational teachers or non-vocational teachers; post-secondary or university-level teachers; state, district, or local extension educators; supervisors, coordinators, administrators; curriculum consultants in business and industry and other educational positions related to the comprehensive or specialized components of home economics.

Learning experiences in the immediate professional setting include: thesis in home economics education, problems in home economics education, externship in home economics and community education, European food study, national study tour in home economics, American study tour in child development, seminar on the culturally disadvantaged child and family, field experience and European study tour.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; student advisement; residency; program plan and intent to graduate.

COMPREHENSIVE PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. This bachelor's degree will generally have been earned in the major of home economics education. However, any of the specialized substantive areas of home economics may be appropriate. The determining factor in

the choice of this concentration is that the applicant plans to teach or supervise in a comprehensive program of home economics upon completion of the degree program.

If the applicant has not completed specific courses in education, five credits will be required in addition to the 30 credits required for the master's degree. These credits may be completed concurrently with the graduate credits.

REQUIREMENTS

The requirements of this degree include: (a) completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0 (such a variety of courses in home economics and in education is offered that these will be individually planned with the program director); a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Preparation in Research (6-10 Cr.)

Professional Education (6-16 Cr.): Home Economics Education (minimum of 6 Cr. is required, including 242-708 Curriculum Studies in Home Economics Education and 242-710 Applied Evaluation in Home Economics); Education; Vocational Education; Psychology; and Media Technology.

Home Economics Substantive Area (6-18 Cr.): Avocational Education, Child Development, Clothing and Textiles, Consumer Education, Family Life, Foods and Nutrition, Home Equipment, Home Management, Hospitality, Habitat, Parenting and Human Development.

SPECIALIZED PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

An applicant whose goals involve teaching or supervising a specialized substantive component of home economics may have an undergraduate degree in any of a variety of fields. Examples of these include hotel and restaurant management, hospitality, food and lodging, food service, dietetics, fashion merchandising, clothing and textiles, early childhood, child development, family life, housing, consumer education, home management, nutrition education and home economics education.

It is recommended that those applicants holding a degree related to business or industry should have completed a minimum of two years of work experience in the specific professional substantive area.

Because this is a program which is planned primarily to prepare educators, the applicant may be required to complete a minimum of five credits, plus an approved teaching experience in addition to the 30 credits required for the master's degree. These credits may be completed concurrently with the graduate credits.

REQUIREMENTS

The requirements of this degree include completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0. Because Stout offers a variety of courses in home economics and in education and the background and goals of persons in this track are as varied as the specializations, these 30 credits will be individually planned with the program director within the following guidelines.

Preparation in Research (6-10 Cr.)

Professional Education (12-16 Cr.): Home Economics Education, Education, Vocational Education, Psychology and Media Technology. 242-708 Curriculum Studies in Home Economics and 242-710 Applied Evaluation in Home Economics are required.

Major Substantive Area (8-12 Cr.)

CERTIFICATION PROGRAM CONCENTRATION

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Prior to full admission the student must complete or have completed 34 credits in home economics as outlined below. These undergraduate credits may be completed concurrently with the graduate credits. The primary purpose of this concentration is to prepare persons who wish to become certified to teach secondary home economics in Wisconsin.

Home Economics Credits Required Before Full Admission

		Credits
212-124	Child Development I	3
212-250	Family Relations I	3
214-140	Textiles.....	3
214-266	Apparel Construction	3
229-124	Foods.....	4
229-212	Nutrition.....	3
229-318	Meal Management.....	3

245-360	Consumer Economics	3
245-275	Management of Family Resources	3
212-xxx	Mini Courses in Family Relationships	1
245-250	Family Housing	2
2xx-xxx	Home Economics Electives*	5

REQUIREMENTS

The requirements for this degree include completion of a minimum of 30 semester hours of graduate credit with a minimum cumulative grade point average of 3.0. In order to be recommended for certification, the student must complete an approved student teaching experience for undergraduate credit and meet human relations and mainstreaming requirements.

Preparation in Research (6-10 Cr.): 421-740 Research Foundations (4 Cr.) and 242-770 or 775 Research Paper (2-6 Cr.) are required.

Professional Education (12-16 Cr.): 479-530 Advanced Psychology of Learning (2 Cr.), 242-708 Curriculum Studies in Home Economics (2 Cr.), 421-581 Reading Methods in Secondary Schools (2 Cr.), 242-710 Applied Evaluation in Home Economics (2 Cr.), 421-714 Teaching Strategies (4 Cr.), 431-630 Mainstreaming Special Students (3 Cr.), and (0-4 Cr.) of electives are required.

Home Economics Substantive Area* (12-16 Cr.): including 212-685 Seminar in Culturally Distinct Child and Family*** (3 Cr.): Electives.

Additional Requirements (8 Cr.): 242-443 Clinical Seminar in Home Economics Education** (2 Cr.) and 242-444 Practicum in Home Economics Education** (6 Cr.) are required.

*For certification the student must have a total of six credits in each of the following areas: child development, family relations, food and nutrition, clothing and textiles, consumer education and management, and housing and equipment.

**To be taken for undergraduate credit.

***To be taken to fulfill the Wisconsin Department of Public Instruction human relations requirement.

HOSPITALITY AND TOURISM

Mr. James F. Burke, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. James Buergermeister, Assistant
Professor

Mr. James F. Burke, Assistant
Professor

Mr. Jafar Jafari, Associate Professor

Dr. Charles J. Metelka, Professor

Dr. Leland L. Nicholls, Professor

Mr. Thomas Phillips, Instructor

Mr. William Way, Instructor

Master of Science Degree. This program is especially designed for persons desiring to enhance management skills in the hospitality and tourism industries. The program goal is to select superior students and to provide them with an educational experience that will prepare them to make a significant contribution as professionals in the hospitality and tourism industry. At the completion of this program, graduate students will have enhanced their management abilities through:

1. Understanding the societal needs for leisure activities and the requirements for implementing hospitality and/or tourism programs responsive to these needs;
2. Developing the capability to resolve problems at the management level of hospitality and/or tourism organization;
3. Conducting and interpreting intra and interdisciplinary research;
4. A knowledge of literature germane to hospitality and/or tourism;
5. Understanding the network of relationships among the components of hospitality and/or tourism;
6. Identifying leading state, national, and international organizations in hospitality and/or tourism; and
7. Acquiring knowledge of sources of information germane to hospitality and/or tourism.
8. Applying computer capabilities to hospitality and/or tourism problems.

Learning experiences in the immediate professional setting include: thesis, seminar in hospitality and tourism, problems in habitational resources-tour, international study tour and internship.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; program seminar; degree candidacy and intent to graduate.

ADMISSION

To be admitted with full status to this program, the applicant must (1) hold a bachelor's degree from an accredited institution; (2) have an overall grade point average of at least 2.75 on a 4.0 scale. (A = 4)

This program is designed for applicants with an undergraduate major in hotel and restaurant management, or equivalent. However, applicants with bachelor's degrees in such fields as economics, anthropology, geography, marketing, business administration, recreation and foreign languages, travel/tourism and hotel restaurant management. The records of applicants holding undergraduate degrees in these and other majors will be evaluated to determine if deficiency work will be required prior to full admission to the program. Those applicants whose preparation for the program is deemed to be deficient will be required to complete additional work, which may be at the undergraduate level, prior to being fully admitted to this graduate program.

Students seeking admission to the program will be expected to have had one course in each of the following areas or equivalent experience:

-Accounting	-Restaurant operation	-Introduction of
-Economics	-Lodging adminis-	tourism
-Sociology or	tration	-Development of
Anthropology	-Food service adminis-	tourism or tourism
	tration	goods and services

Students must submit admission applications no later than June 1 for Fall term and November 1 for Spring term enrollment. Both a Graduate College application form and a program application form are required. All required admission documents (including official transcripts of all previous graduate and undergraduate work completed) must be received by Stout's Graduate office on or before these dates.

Students will be admitted on the basis of academic performance and other factors appropriate for consideration as follows:

- work experience in the hospitality and tourism industry.
- letters of recommendation from employers and/or previous instructors (request these forms from the program director).
- ratings of the applicant as judged by a screening committee, an interview and program director's recommendation.

REQUIREMENTS

The requirements for this degree include (a) completion of at least 36 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students 700-800 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below.

Preparation in Research (11 credits)		Credits
245-780	Seminar in Hospitality and Tourism	1
421-740	Research Foundations	4
245-789	Thesis — Hospitality and Tourism*	6

General Requirements (11 credits)		
245-640	Psycho-social Implications of Tourism and Hospitality ..	3
245-710	Issues in Hospitality and Tourism	2
320-610	Contemporary American Economic Problems (or)	3
320-615	Contemporary International Economic Problems	3
387-525	Sociology of Leisure (or)	3
387-575	Sociology of Minority Groups	3

Professional Depth Requirements (7-9 credits)		
245-625	Hospitality Law and Liability	3
245-645	Geography of Tourism	3
245-670	Hospitality Industry Analysis Budgeting and Forecasting	3
245-682	Hospitality and the Handicapped Traveler	1
245-700	Concepts in Food and Lodging Management	3
245-701	Implementation of Management Concepts in Food and Lodging Services	1
245-702	Operational Controls in Food and Lodging Management	1
245-703	Analysis of Food and Lodging Management Systems	3

*The creative intellectual inquiry component for this proposed program will be accommodated through the preparation by each student of a thesis. Theses may be of the usual type identified and completed on-campus within the university setting. They may also evolve from practical problems resulting from internships or field experiences (credit or non-credit) but which are still developed presented and defended to meet the usual standards for theses of the Graduate College.

Electives (5-7 credits)		
150-600	Organizational Leadership	3
150-700	Systems Analysis and Design	3
150-710	Seminar in Industrial Operation	3
160-690	Administrative and Business Policies	3
245-521	Food Service Equipment	2
245-621	Food Service Equipment Analysis	2

245-600	Integrated Management Systems—Hospitality	2
245-626	Employee and Labor Relation in Hospitality Industry ...	2
245-681	Special Problems in Habitational Resources	2
245-7xx	Internship	1-6
309-679	Marketing Research	3
320-720	Labor and Industrial Relations	2
326-516	Technical Writing for Industry	3
326-518	Mass Communication in American Society	3
387-530	Sociology of the Community	3
421-679	Public Relations.....	2
421-714	Teaching Strategies.....	4
421-750	Curriculum Theory and Practice	2
100-500	Introduction to Futures Studies	2

Other appropriate graduate courses may be approved as electives by the program director.

Although this program has been approved by the Board of Regents of the University of Wisconsin, an implementation date has not been set.

SCHOOL OF EDUCATION AND HUMAN SERVICES

Dr. David Sabatino, Dean
Dr. Donald Stephenson, Associate Dean

GUIDANCE AND COUNSELING

Dr. Gerald F. Davis, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. Tom Allen, Assistant Professor	Ms. Carol Hogstad, Associate Professor
Dr. Charles Barnard, Professor	Dr. John Houle, Professor
Dr. David Cook, Professor	Dr. Robert Hoyt, Professor
Dr. Gerald Davis, Associate Professor	Dr. Gust Jensen, Professor
Dr. John C. Deutscher, Professor	Dr. Lou Klitzke, Professor
Dr. Tom Franklin, Associate Professor	Dr. David McNaughton, Professor
Dr. Carlyle Gilbertson, Professor	Mr. Harlyn Misfeldt, Associate Professor
Dr. Pinckney Hall, Professor	Dr. Virginia Peter, Professor

Dr. Mary Rains, Associate Professor
Dr. Michael Ritland, Professor
Dr. Donald Stephenson, Professor

Dr. Calvin L. Stoudt, Professor
Dr. Robert Wurtz, Professor

Master of Science Degree. The program in guidance and counseling provides a basic preparation in counseling. This can lead to certification by the State of Wisconsin for school counseling and employment in the public schools or to employment in a counseling position in other clinic and agency settings.

Students who seek certification from the Wisconsin Department of Public Instruction must choose either the elementary or the secondary school option, or may elect to meet both elementary and secondary requirements for certification as a school counselor on a K-12 basis. Students desiring to be certified for counseling positions in the Vocational, Technical and Adult Education System, and who can meet the teacher certification and experience requirement for that system, may elect to follow the secondary certification program or the vocational-technical school program.

Students interested in community or mental health agency counseling should apply for the degree without a concentration. Those with a specific interest in alcohol and drug abuse or employment counseling should apply for the appropriate concentration.

Learning experiences in the immediate professional setting include: supervised counseling practicum.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

Applicants for any of the school certification concentrations must hold a teaching certificate valid in Wisconsin and have completed two years of teaching experience to be eligible for endorsement as a school counselor. If the applicant cannot meet this requirement, the alternative of a one-year full-time internship following completion of the certification program will enable the student to become certified as a school counselor in Wisconsin. Only a limited number of students will be admitted to the internship program and no internship can be guaranteed.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: applicant's goals; counseling process laboratory and practicum evaluation.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

SCHOOL CERTIFICATION CONCENTRATIONS

Core Requirements (21-25 Cr.)		Credits
387-710	Sociological Foundations for Guidance	3
413-788	Counseling Process Laboratory	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
489-753	Psychometric Theory and Application	2
421-740	Research Foundations	4
413-790	Supervised Counseling Practicum	4
413-731	Problems in Counseling (Plan B)	2
or		
413-770	Thesis in Counseling (Plan A)	6

General Certification Requirements (10 Cr.)		
489-753A	Guidance Laboratory	1
413-733	Career Development Process and Issues	2
413-733A	Career Information Laboratory	1
413-765	Organization and Administration of Guidance	3
431-630	Mainstreaming the Special Student	3

Elementary Counseling Concentration (4 Cr.)

413-629	Guidance in the Elementary School	2
413-705	Play Therapy	2

Note: Elementary counseling students who have never taken a personality theory course or a child psychology course (or developmental psychology) will be required to take 479-760 Personality, 2 cr. and 479-251 Child Psychology, 3 cr. as deficiencies for their psychology selective.

Secondary Counseling Concentration (1 Cr.)

413-787	Career Placement Services	1
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Note: Secondary counseling students who have never taken a personality theory course or an adolescent psychology (or developmental psychology) course will be required to take 479-760 Personality, 2 cr. and 479-552 Psychology of Adolescence, 3 cr. as deficiencies for their psychology selective.

K-12 School Counseling

Students who wish to be endorsed for all levels of school counseling must meet all the requirements of both the elementary and secondary counseling concen-

trations. In addition, the practicum placement will be divided between an elementary school and a secondary school placement. The total number of required credits for K-12 endorsement will be 41-48 depending on whether there are deficiencies to be made up.

Internship Requirements: Students who will attain K-12 school counselor certification in Wisconsin and some other states through the internship are required to meet some minimum competencies in areas of teacher preparation dealing with curriculum development, organization of schools, the politics of education and the teaching-learning process. The following two courses enable the student to meet these competency areas and are required to be completed before entering the internship experience. Substitutions or waivers may be made for students with previous equivalent course work or experience. An independent study project constitutes one of the three credits for each of these two courses.

421-750	Curriculum Theory and Practice	3
421-726	Administration.....	3

Vocational-Technical School Concentration (6 Cr.) Credits

413-787	Career Placement Services	2
469-502	Principles of Vocational, Technical and Adult Education	2
469-792	Administration of Vocational, Technical and Adult Education	2

Note: Vocational-Technical School counseling students who have never taken a personality theory course will be required to take 479-760 for their psychology selective.

ALCOHOL AND DRUG ABUSE COUNSELING CONCENTRATION

Core Requirements (30 Cr.) Credits

413-788	Counseling Process Lab.....	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
489-753	Psychometric Theory and Application	2
421-740	Research Foundations.....	4
413-775	Alcohol and Drug Abuse Counseling Practicum I.....	8
413-776	Alcohol and Drug Abuse Counseling Practicum II.....	8
413-731	Problems in Counseling and Psychological Services.....	2
or		
413-770	Thesis.....	6

Concentration Requirements (15 Cr.)

140-574	Alcohol, Drugs and Accident Prevention	3
or		
459-520	Rehabilitation of Chemically Dependent	3
413-721	Alcohol and Drug Abuse Treatment Programs	3
413-666	Alcoholism and Family Systems Intervention	2
212-750	Systems of Marriage and Family Therapy	3
212-751	Marriage and Family Therapy Seminar	3
413-715	Orientation to Mental Health Counseling	1

Psychology Requirements (4-6 Cr.)

479-760	Personality*	2
479-561	Abnormal Psychology*	3
479-535	Motivation and Emotion	3
479-552	Adolescent Psychology	3
479-850	Psychology of Development	3
479-570	Assertive Training Procedures	2
479-730	Advanced Psychology of Learning	2
413-760	Theories and Techniques of Behavior Modification	2
413-705	Play Therapy	2
413-650	Behavior Problems of Adolescents	2
413-647	Behavior Problems of Children	2
489-745	Assessment of Personality	2
479-574	Psychology of Women	2

*If 479-760 or 479-561 have not been taken they are required as part of the graduate program. If one or both of these courses were taken as an undergraduate, select one or two other courses from this list as part of the program.

Electives (9-11 Cr.)

Electives (9-11 Cr.)		Credits
421-742	Program Evaluation	3
413-744	Psychometric Aids to Marriage and Family Therapy	2
413-890	Multiple Counseling and Sensitivity Training	2
413-694	Counseling Older Persons.....	2
459-525	Rehabilitation of the Public Offender.....	3
459-509	Introduction to Biofeedback.....	3
459-510	Clinical Biofeedback Laboratory.....	3
308-650	Neuroanatomy.....	2
308-651	Psychobiology.....	2
212-755	Professional Issues in Marriage and Family Therapy	3
212-653	Couples Communication Training	2
212-760	Sex Therapy Seminar.....	2
212-728	Family Life Issues.....	2
212-660	Current Sex Research	1
212-680	The Aging Person	2
500-510	Introduction to Women's Studies.....	2

Total Credits for the Program:

60

EMPLOYMENT COUNSELING CONCENTRATION

Core Requirements (18-22 Cr.)

413-788	Counseling Process Laboratory	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
489-753	Psychometric Theory and Application	2
421-740	Research Foundations	4
413-790	Supervised Counseling Practicum	4
413-731	Problems in Counseling	2
or		
413-770	Thesis	6

Employment Counseling Concentration (12 Cr.)

413-733	Career Development Process and Issues	2
459-717	Occupational Analysis and Information	2
469-534	Task Analysis	2
489-753A	Guidance Laboratory	1
	Electives	5

DEGREE WITHOUT CONCENTRATION

Those students whose professional objectives are more general than alcohol and drug abuse have the option of taking the Core Requirements (18-22 Cr.) under employment counseling and developing a set of elective course work with the approval of the program director. Electives will be chosen that will best meet the professional interests and needs of the student. The practicum placement will be made in a setting as close as possible to the student's employment objectives. Available practicum placements and elective course work is best suited to those students who are interested in working as counselors in community agency settings.

Preparation for Further Individual and Professional Development

Students who already hold a master's degree in some field of education but who are not certifiable for counseling may choose to meet certification requirements without the necessity of completing a second master's degree. The program director will evaluate transcripts and identify those courses that will be necessary for endorsement as a school counselor.

Full-Time or Part-Time Study

Extended field placement required in these programs averages two days per week for one semester in the school certification concentrations. Part-time study while holding a full-time job is very difficult unless the employment provides considerable flexibility. The practicum may not be completed in the sum-

mer session because the time available is not extensive enough and regular school placements are not available. Therefore, full-time study for at least one calendar year is recommended. A substantial portion of all concentrations may be completed part time by attending summer sessions and during the regular semesters for late afternoon and evening classes. However, a substantial commitment for at least one semester will be required at the point where the student is ready for the practicum field placement.

MARRIAGE AND FAMILY THERAPY

Dr. Charles Barnard, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Charles Barnard, Professor

Dr. Gregory Brock, Associate
Professor

Dr. David Cook, Professor

Dr. Jeanette Coufal, Assistant
Professor

Dr. John C. Deutscher, Professor

Dr. Carlyle Gilbertson, Professor

Dr. Gust Jenson, Professor

Dr. Denise Skinner, Associate
Professor

Dr. Wm. Staniszewski, Assistant
Professor

Dr. Calvin L. Stoudt, Professor

Dr. John Williams, Associate
Professor

Dr. Karen Zimmerman, Professor

Master of Science Degree. The offerings are designed to develop specific competence in the following areas of marriage and family therapy: counseling services, consultation, coordination, referral, psychometric assessment and evaluation, and research design and procedures. This program is designed to prepare people for work in mental health clinics, family life agencies, hospitals, industry, schools and/or private practice. The core of the program is experientially and practically orientated. This program is fully accredited by the American Association for Marriage and Family Therapy.

Learning experiences in the immediate professional setting include: marriage and family therapy practicums.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Applicants may be admitted on probationary status if their overall grade point average is at least 2.25, but less than 2.75. Applicants who have less than a 2.25 overall grade point average, but have relevant work experience since receiving the bachelor's degree and who are otherwise judged quali-

fied as indicated below, may qualify for admission by taking a full credit load of selected undergraduate courses during the summer session or regular session and attaining a 3.0 grade point average.

It is recommended that the applicant have an undergraduate degree with major emphasis in one of the behavioral sciences or a closely related field. Applicants with deficiencies may be required to take additional undergraduate or graduate courses prior to attaining full status in the program. Students must complete the admissions process no later than March 15 of the year enrollment is planned. Both a Graduate College application form (obtainable from the Graduate College office) and a program application form (obtainable from the office of the program director) are required. Completion of the admission process means that all required admission documents must be in the Stout Graduate office and that program admission documents must be in the program director's office prior to March 15.

When the number of students applying exceeds the number that can be accommodated, students will be admitted on the basis of academic performance, and other factors appropriate for consideration as listed below:

1. Work experience in a helping profession, i.e., counseling, social work, psychology, agency work, clergy and education.
2. Letters of recommendation from employers and consumers of services provided by the applicant. (Request these forms from the program director.)
3. Ratings of the individual as determined by a screening committee and process evaluation.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; admissions interview; applicant's goals; practicum evaluation and intent to graduate.

REQUIREMENTS

The requirements for this degree include: (a) completion of the 60-credit curriculum or demonstrated competence in the 60-credit curriculum with completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Professional Foundations (16 Cr.)		Credit
212-760	Sex Therapy Seminar	2
212-653	Relationship Communication Training	2
413-705	Play Therapy	2
413-675	Counseling Theory	2

479-760	Personality	2
479-561	Abnormal Psychology	3
303-610	Anthropological Study of Family Systems	3

Research (6-10 Cr.)

421-740	Research Foundations	4
500-735	Investigations in Marriage and Family Counseling (or) ..	2
	Thesis in Marriage and Family Counseling	6

Preparation Basic to Program (31 Cr.)

212-750	Systems of Marriage and Family Therapy	3
212-751	Marriage and Family Therapy Seminar	3
212-793	Practicum in Marriage and Family Therapy	4
212-794	Practicum in Marriage and Family Therapy	4
413-744	Psychometric Aids to Marriage and Family Therapy	2
413-793	Practicum in Marriage and Family Therapy	4
413-794	Practicum in Marriage and Family Therapy	4
413-795	Practicum in Marriage and Family Therapy	2
413-666	Alcoholism and Family Systems Intervention	2
212-753	Professional Issues in Marriage and Family Therapy	3

Electives (7 Cr.) Choose from courses such as the following:

212-580	Future of the Family	1
212-581	Dynamics of Marital Interaction	2
212-607	Parent Counseling	2
212-626	Special Topics in the Study of Family Life	3
212-680	Aged Person and His Family	1
212-685	Seminar on the Culturally Disadvantaged Child and Family	3
212-707	Issues and Problems in Parent Education	2
212-728	Family Life Issues	2
245-676	Family Finance	2
326-525	Advanced Technical Writing	3
326-546	Research Reporting	2
365-550	Ethical Valuing	2
387-525	Sociology of Leisure	3
387-530	Sociology of the Community	3
387-540	Sociology of Work	3
387-560	Sociology of Juvenile Delinquency	3
387-575	Sociology of Minority Groups	3
387-710	Sociological Foundations of Guidance	3
413-647	Behavior Problems of Children	2
413-715	Orientation to Mental Health Counseling	1
413-721	Alcohol and Drug Abuse Treatment Programs	3
413-745	Assessment of Personality	2
413-760	Theories and Techniques of Behavior Modification	2
413-785	Seminar in Hypnosis	2
413-890	Multiple Counseling and Sensitivity Training	2
413-892	Advanced Counseling Practicum	2

479-760	Personality	2
479-561	Abnormal Psychology	3
303-610	Anthropological Study of Family Systems	3

Research (6-10 Cr.)

421-740	Research Foundations	4
500-735	Investigations in Marriage and Family Counseling (or) ..	2
	Thesis in Marriage and Family Counseling	6

Preparation Basic to Program (31 Cr.)

212-750	Systems of Marriage and Family Therapy	3
212-751	Marriage and Family Therapy Seminar	3
212-793	Practicum in Marriage and Family Therapy	4
212-794	Practicum in Marriage and Family Therapy	4
413-744	Psychometric Aids to Marriage and Family Therapy	2
413-793	Practicum in Marriage and Family Therapy	4
413-794	Practicum in Marriage and Family Therapy	4
413-795	Practicum in Marriage and Family Therapy	2
413-666	Alcoholism and Family Systems Intervention	2
212-753	Professional Issues in Marriage and Family Therapy	3

Electives (7 Cr.) Choose from courses such as the following:

212-580	Future of the Family	1
212-581	Dynamics of Marital Interaction	2
212-607	Parent Counseling	2
212-626	Special Topics in the Study of Family Life	3
212-680	Aged Person and His Family	1
212-685	Seminar on the Culturally Disadvantaged Child and Family	3
212-707	Issues and Problems in Parent Education	2
212-728	Family Life Issues	2
245-676	Family Finance	2
326-525	Advanced Technical Writing	3
326-546	Research Reporting	2
365-550	Ethical Valuing	2
387-525	Sociology of Leisure	3
387-530	Sociology of the Community	3
387-540	Sociology of Work	3
387-560	Sociology of Juvenile Delinquency	3
387-575	Sociology of Minority Groups	3
387-710	Sociological Foundations of Guidance	3
413-647	Behavior Problems of Children	2
413-715	Orientation to Mental Health Counseling	1
413-721	Alcohol and Drug Abuse Treatment Programs	3
413-745	Assessment of Personality	2
413-760	Theories and Techniques of Behavior Modification	2
413-785	Seminar in Hypnosis	2
413-890	Multiple Counseling and Sensitivity Training	2
413-892	Advanced Counseling Practicum	2

459-585	Mental Retardation	2
459-701	Introduction to Vocational Rehabilitation	2
459-717	Occupational Analysis and Information	2
459-738	Psychological Disability and Work	3
479-632	Perception	3
479-562	Psychology of the Exceptional Child	2
479-570	Assertive Training Procedures	2
500-500	Introduction to Futures Study	2
500-510	Introduction to Women's Studies	2

PROFESSIONAL DEVELOPMENT

Dr. Virginia Peter, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. Thomas C. Allen, Assistant Professor	Dr. John M. Houle, Professor
Dr. Charles P. Barnard, Professor	Dr. Gust Jenson, Professor
Dr. David R. Cook, Professor	Dr. Louis Klitzke, Professor
Dr. Gerald F. Davis, Associate Professor	Mr. Harlyn Misfeldt, Associate Professor
Dr. John C. Deutscher, Professor	Dr. Orville Nelson, Professor
Dr. Thomas E. Franklin, Associate Professor	Dr. Daniel Paulson, Visiting Assistant Professor
Dr. Richard H. Gebhart, Professor	Dr. Virginia Peter, Professor
Dr. Carlyle Gilbertson, Professor	Dr. Mary Rains, Associate Professor
Dr. Douglas D. Gingrich, Associate Professor	Dr. Michael Ritland, Professor
Dr. Harold H. Halfin, Professor	Dr. Robert Sedlak, Professor
Mr. Richard Halmstad, Associate Professor	Dr. Donald J. Stephenson, Professor
Dr. Bette Ann Hanson, Professor	Dr. John Stevenson, Professor
Ms. Carol Hogstad, Associate Professor	Dr. Calvin L. Stoudt, Professor
Dr. Veryle E. Homuth, Associate Professor	Dr. Robert Wurtz, Professor
	Dr. Karen W. Zimmerman, Professor

Master of Education-Professional Development. This program is especially designed for persons who have experience in teaching and for persons in business and industry who are interested in enhancing their instructional curriculum development, research and evaluation skills. Programs planned for individual students will develop competencies which are specifically related to the skills

needed in their professional careers. More specifically, this program is designed for:

1. Those bachelor's degree holders who are also certified teachers.
2. Those who are employed at the vocational-technical post-secondary level who hold a bachelor's degree in a content area and whose goal is to develop professional skills and obtain initial certification.
3. Those bachelor's degree holders employed in business and industry whose goals include the development of professional education skills.

Learning experiences in the immediate professional setting include: thesis and problems in education.

ADMISSION

To be admitted with full status to this program, the applicant must (1) hold a bachelor's degree from an accredited institution; (2) have an overall grade point average of at least 2.75, or an average of at least 2.90 in the last one-half of the undergraduate work, or an average of at least 3.0 for no less than 12 semester credits of graduate study; (3) have two academic years of successful teaching experience or its equivalent; and (4) have identified and obtained the program director's approval for the objectives for the student's professional development degree program.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; applicant's goals; tentative program plan; related work experience; degree candidacy and intent to graduate.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 30 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) approval for degree candidacy at the appropriate time; and (c) a required course distribution as outlined below and (d) formally stated objectives and a planned program leading to the degree approved by both the program director and the dean of the Graduate College.

Preparation in Research		Credits
421-740	Research Foundations.....	4
421-765	Problems in Education or.....	2
421-770	Thesis.....	6

Preparation Basic to Program

421-744	Seminar in Education	2
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Preparation in Chosen Professional Development Area(s)

This program is designed to meet a variety of needs through the development of competencies specifically related to those students need in their jobs. Graduate students will analyze their professional development needs. When appropriate, additional information relative to competencies needed will be sought from the employer or other professional source. This information and the student's goals will be synthesized by the student who with the program director's or designate's approval will identify the objectives for the student's professional development degree program. The student will then develop an educational program based on this planning conference. The skills and knowledge required to achieve these objectives will be matched with graduate level learning experiences such as courses, seminars, internships and field experiences to develop the competencies identified. The program director or designate and the student will sign the program plan and forward it to the dean of the Graduate College for approval.

Electives (chosen in advance with the approval of the program director or designate) 18-22

Minimum Total 30

SCHOOL PSYCHOLOGY

Dr. Calvin Stoudt, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. Thomas Allen, Assistant Professor	Dr. Gust Jenson, Professor
Dr. Charles Barnard, Professor	Dr. David McNaughton, Professor
Dr. Gerald Davis, Associate Professor	Dr. Fred Menz, Sr. Research Specialist
Dr. John Deutscher, Professor	Dr. Thomas Modahl, Professor
Dr. Paul Fenton, Assistant Professor	Dr. Orville Nelson, Professor
Dr. Thomas Franklin, Associate Professor	Dr. Virginia Peter, Professor
Dr. Carlyle Gilbertson, Professor	Dr. Mary Rains, Associate Professor
Dr. Pinckney Hall, Professor	Dr. John See, Associate Professor
Ms. Carol Hogstad, Associate Professor	Dr. Calvin L. Stoudt, Professor
Dr. Robert Hoyt, Professor	Ms. Margaret Wiinamaki, Assistant Professor
	Dr. Robert Wurtz, Professor

Programs available: Master of Science in Education. Provisional School Psychologist certification and School Psychologist certification.

MASTER OF SCIENCE IN EDUCATION

The school psychology program at Stout is a combined degree and certification program. The degree program occupies the first year of study on campus and leads to a Master of Science in Education degree. The certification program follows the degree program and leads to school psychological certification which is awarded, upon University recommendation, by the Wisconsin Department of Public Instruction or, if the applicant leaves Wisconsin, by the certifying agency of the state to which application is made. Admission to the degree and certification programs are separate processes, which include an admissions committee review of the admission material submitted by each applicant as described below.

DEGREE PROGRAM ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75. Applicants may be admitted on probationary status if their overall grade point average is at least 2.25, but less than 2.75. Applicants who have less than a 2.25 overall grade point average, but have relevant work experience and who are otherwise judged qualified as indicated below, may qualify for admission by taking selected undergraduate courses, prescribed by the program director, and attaining a 3.0 or better grade point average.

Applicants should have an undergraduate degree with major emphasis in one of the behavioral sciences or a closely related field. As part of the preparation for entry to the master's degree program, a minimum of 15 credits in psychology and/or education courses in the following areas is required: developmental psychology, behavior disorders, personality, learning and/or statistics. The applicant with insufficient background may be required to take specific undergraduate courses in these areas in addition to those required within the graduate program.

Both the Graduate College Application form (obtainable from the Graduate College) and a Program Application form (obtainable from the program director) must be submitted by each applicant, including the documents identified on these two forms. Applicants must have presented and filed all required admissions documents by March 15 of the year enrollment is planned. After committee review, notification of acceptance will be made by April 15. If openings exist after this date, late applications will be accepted until June 15, with notification by July 15. When program openings occur, after the June 15 date, the program director and the committee will determine whether these applications may be acted upon for admission during the fall or winter term, or whether it may be necessary to hold admission until the next March 15 applica-

tion deadline. In any event, the process for selecting applicants will be strictly followed in each and every case.

Students will be admitted on the basis of academic performance, admissibility to the Graduate College and rankings of a screening committee. These rankings are based on the following:

1. Work experience in a helping profession, i.e., counseling, social work, psychology, volunteer activities, etc.
2. Letters of recommendation from employers, instructors and consumers of services provided by the applicant.
3. An autobiographical statement in which the applicant has outlined interest, intent and goals regarding the profession of school psychology.
4. A personal or telephone interview with the school psychology program director and faculty.

CERTIFICATION PROGRAM ADMISSION

Admission to the degree program does not ensure admission to the certification program. Rather, admission to the certification program occurs after members of faculty have had opportunity to observe the student's progress and to evaluate performance.

Application occurs after the student has maintained at least a 3.0 grade point average, has attained a grade of "B" or better in 413-788 Counseling Process Lab and is either currently maintaining grades of "B" or better or has completed with grades of "B" or better each of the following courses: 489-743 Advanced Individual Mental Testing; 489-768 Diagnosis and Remediation of Learning Disabilities; 489-768A Diagnostic Lab and 413-790 Counseling Practicum.

Application materials may be obtained from the program director. The process includes the submission of letters of recommendation by two Stout faculty members who are also certified school psychologists and from the counseling practicum supervisor. It also requires successful completion of a comprehensive examination given during the first week of summer school. Upon the basis of this information, a screening committee will recommend either admission to the certification program or termination from the certification program.

Practicing professionals who already possess an appropriate master's degree may wish to seek school psychological certification only. Such individuals must also apply for admission to the certification program, and to the Graduate College. To be considered for admission to the certification program, such applicants must be admitted to the Graduate College; provide three letters of recommendation from past employers and consumers of services; enroll for one term (summer session will suffice) in courses recommended by the program director; complete all aforementioned courses with a minimum of "B"; make application to the screening committee; and successfully complete the required comprehensive examination.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: applicant's goals; counseling process laboratory and practicum evaluation.

REQUIREMENTS

The program outlined below includes all requirements for provisional school psychologist and school psychologist certification. Completion of the degree will require the completion of a minimum of 30 credits and the inclusion of all courses below marked with an asterisk. Credits earned toward the degree must meet a grade point average of 3.0 or better. A minimum of 15 credits must be in courses open only to graduate students—700 level. Students must be approved for degree candidacy at the appropriate time.

All courses listed below are required for provisional school psychologist certification. However, students who have taken any of the psychology courses at the undergraduate level will not be required to repeat these courses at the graduate level. The minimum number of graduate credits required to be recommended for certification as a provisional school psychologist is 55; for school psychologist, 60 credits.

Psychological Foundations		Credits
479-850	Psychology of Development (or)	3
479-251	Child Psychology (undergraduate credit only) (and).....	3
479-552	Adolescent Psychology	3
479-561	Abnormal Psychology	3
479-530	Psychology of Learning (or).....	3
479-730	Advanced Psychology of Learning	2
479-760	Personality	2
489-753	Psychometric Theory and Application*	2
421-740	Research Foundations*	4
489-731	Problems in School Psychology* (or)	2
489-770	Thesis in School Psychology.....	6
Educational Foundations (6 Cr. minimum)		
431-630	Mainstreaming the Special Student	3
421-750	Curriculum Theory and Practice (or)	3
421-738	Elementary School Curriculum	3
421-702	Principles of Supervision (or)	3
421-726	Administration.....	3
Core Professional Training		
489-753B	School Psychology Laboratory (mental testing)*	1
489-743	Advanced Individual Mental Testing*	2

489-745	Assessment of Personality (projectives)	2
489-766	Educational Applications of Neuropsychology	2
489-768	Diagnosis and Remediation of Learning Disabilities*	2
489-768A	Diagnosis Laboratory*	1
489-778	Psychoeducational Disability*	3
212-545	Preschool Programming for Mentally Handicapped	3
413-760	Theory and Techniques of Behavior Modification	2
413-705	Play Therapy	2
413-675	Counseling Theory	2
413-752	Group Dynamics	2
413-788	Counseling Process Laboratory*	2
413-790	Supervised Counseling Practicum*	2
489-701	Seminar in School Psychology Services*	2
489-781	Field Practicum in Psychoeducational Services I	3
489-782	Field Practicum in Psychoeducational Services II	3
489-784	Clinical Practicum in Psychoeducational Services I	2
489-785	Clinical Practicum in Psychoeducational Services II	2

*Courses required for the degree.

DEGREE WITHOUT CERTIFICATION

Students who do not intend to work in the schools as school psychologists but who are interested in the mental health field where a preparation emphasizing disabilities, assessment, diagnosis and counseling would be desirable, may elect to complete the degree only. This may be completed in one calendar year. Students choosing this option must take the required degree courses as marked above and electives to total a minimum of 30 credits.

Preparation for further technical development.

Persons preparing to teach will select advanced courses in their subject field. This bulletin lists graduate level technical courses, which are available for graduate credit in certain individual situations. Students are urged to investigate advanced subject matter courses suitable to their particular teaching field; in some teaching areas it may be desirable to transfer them from another institution. However, prior approval to take any course should be obtained.

VOCATIONAL REHABILITATION

Dr. Thomas Modahl, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Karl F. Botterbusch, Associate
Professor

Dr. Darrell D. Coffey, Professor

Dr. David W. Corthell, Professor

Dr. Howard Feldman, Associate
Professor

Mr. Ron Fry, Instructor

Dr. Paul R. Hoffman, Professor

Mr. Anthony Langton, Assistant
Professor

Dr. Daniel C. McAlees, Professor

Dr. Frederick E. Menz, Professor

Dr. Thomas Modahl, Professor

Dr. Walter A. Pruitt, Professor

Dr. Arnold B. Sax, Professor

Dr. John See, Associate Professor

Ms. Shirley Stewart, Instructor

Mr. John Wesolek, Assistant
Professor

Master of Science Degree. This program is designed to develop specific and general competencies required of specialists in the areas of vocational evaluation and work adjustment. The master of science degree program may be completed in 12 months by successful full-time students (39-40 credits). Exceptions to program requirements may be requested by students upon successful demonstration of skills. Exceptions are ordinarily processed through the course instructor, program director and school dean. Students may elect to extend the time period beyond the 12-month period if they prefer to progress at a slower pace or if they prefer to become qualified in both vocational evaluation and work adjustment.

Learning experiences in the immediate professional setting include: practicum experience in vocational evaluation, practicum experience in work adjustment, internship experience, job analysis experience and visitations.

ADMISSION

Entrance into the program requires the unanimous vote of approval by the Vocational Rehabilitation Admissions Committee. Approval will be dependent upon: (1) demonstrated potential for successful academic achievement at the graduate level; (2) interest in working with the handicapped; (3) personal and social characteristics necessary to work with the handicapped, such as personal and social maturity and a combination of patience, empathy and understanding; (4) ability to work independently; (5) ability to carry out professional responsibilities; and, (6) familiarity with American industry or business (applicants from a foreign country may meet this requirement by presenting evidence of one year related work experience in American industry or business, or two

years in business and industry in an industrial-oriented society plus proven facility with the English language).

The decision for admission or denial of admission by the Vocational Rehabilitation Program Admissions Committee will be based on the criteria above with information obtained from records of undergraduate and/or other graduate academic attainment, letters of reference from a minimum of three persons who are familiar with the applicant in work and/or educational settings, information provided on the program application form, and other data and information received by the committee. The committee may require an interview in any case where information submitted is insufficient for rendering a decision.

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75 or 2.90 for the last two years. Applicants may be admitted on probationary status if their overall grade point average is at least 2.25 but less than 2.75. Applicants who have less than a 2.25 overall grade point average but have related work experience since receiving their bachelor's degree may qualify for admission by taking a block of courses prescribed by the program director in which a "B" or better must be earned to gain admission to the program on probation. Work earned on trial status will normally be in addition to the usual degree requirements.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: program application; practicum evaluation; internship evaluation; degree candidacy and intent to graduate.

REQUIREMENTS

The requirements for this degree include: (a) completion of a minimum of 30 semester hours of graduate credit with an overall grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate students—700 level; (b) a minimum grade of "B" or better in laboratory, practicum and internship courses; (c) approval for degree candidacy at the appropriate time; and (d) a course distribution as outlined below for the specific sub-major.

VOCATIONAL EVALUATION

Preparation in Research (6-10 credits)		Credits
421-740	Research Foundations	4
459-755	Problems in Vocational Rehabilitation (or)	2
459-770	Thesis in Vocational Rehabilitation	6

Preparation Basic to Concentration (30-34 credits)		Credits
459-585	Rehabilitation of the Mentally Retarded	2
459-703	Physical Disability and Work	3
459-706	Laboratory in Work Evaluation	2
459-707	Practicum in Work Evaluation	4
459-610	Psychological Testing with Handicapped People	2
459-717	Occupational Analysis and Information	2
459-723	Procedures of Work Evaluation	3
459-724	Procedures of Work Adjustment	2
459-738	Psychological Disability and Work	2
459-761	Counseling Techniques	2
459-780	Administration in Vocational Rehabilitation	2
459-783	Internship in Work Evaluation	4-6-8

Preparation for Further Individual and Professional Development

459-505	Sign Language I	3
459-700	Seminar in Vocational Rehabilitation	1-2
459-769	Behavior Change Techniques with Handicapped People	3
459-799	Independent Studies in Vocational Rehabilitation	1-2
413-741	Individual Mental Testing	2
413-743	Advanced Individual Mental Testing	2
413-752	Group Dynamics	2
413-760	Theories and Techniques of Behavior Modification	2
459-685	Group Processes in Rehabilitation	2

WORK ADJUSTMENT

Preparation in Research (6 credits)

421-740	Research Foundations	4
459-755	Problems in Vocational Rehabilitation	2

Preparation Basic to Concentration (33 credits)

459-585	Rehabilitation of the Mentally Retarded	2
459-703	Physical Disability and Work	3
459-704	Laboratory in Work Adjustment	2
459-709	Practicum in Work Adjustment	3
459-717	Occupational Analysis and Information	2
459-723	Procedures of Work Evaluation	3
459-724	Procedures of Work Adjustment	2
459-738	Psychological Disability and Work	2
459-761	Counseling Techniques	2
459-769	Behavior Change Techniques with Handicapped People	3
459-780	Administration in Vocational Rehabilitation	2
459-789	Internship in Work Adjustment	6
413-760	Theories and Techniques of Behavior Modification	2

Preparation for Further Individual and Professional Development

459-505	Sign Language I	3
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459-700	Seminar in Vocational Rehabilitation	1-2
459-799	Independent Studies in Vocational Rehabilitation	1-2
479-530	Psychology of Learning	3
479-570	Assertive Training Procedures	2
479-730	Advanced Psychology of Learning	2
413-752	Group Dynamics	2

EDUCATION SPECIALIST DEGREE GUIDANCE AND COUNSELING

Dr. Carlyle W. Gilbertson, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Dr. Charles Barnard, Professor
 Dr. David Cook, Professor
 Dr. Gerald Davis, Associate
 Professor
 Dr. John Deutscher, Professor
 Dr. Carlyle Gilbertson, Professor
 Dr. Pinckney Hall, Professor
 Dr. Robert Hoyt, Professor
 Dr. Gust Jenson, Professor

Dr. David McNaughton, Professor
 Dr. Orville Nelson, Professor
 Dr. Michael Ritland, Professor
 Dr. John Stevenson, Professor
 Dr. Calvin Stoudt, Professor
 Dr. John Williams, Associate
 Professor
 Dr. Robert Wurtz, Professor

The Education Specialist degree in guidance and counseling is an advanced degree requiring 36 semester credits beyond the master's degree.

The program is for people who have a master's degree in guidance and counseling or in one of the related helping professions. It is designed to enable the student to develop beyond the master's degree level those competencies required in the broad area of guidance, counseling, psychological services or related helping services.

Persons certifiable under the Wisconsin 30 credit Professional School Counselor Certification plan who have master's degrees in other fields are eligible for this program.

ADMISSION

Persons interested should contact the program director. Students seeking admission to the program should complete the following at least 30 days prior to the opening of the term in which they plan to begin their program.

1. File an application for admission to the Ed.S. program.
2. Submit a current vita listing all pertinent biographical and educational data.

3. Present official transcripts of all college and university work completed certifying award of bachelor's and master's degrees. Master's degree work must be in guidance and counseling or an equivalent field with a cumulative grade point average of at least 3.25 on a 4.0 scale in all graduate work. Transcripts need not be submitted for work completed at Stout.
4. Evidence of at least two years of successful professional experience or the equivalent is desirable and letters attesting to such experience or professional promise should be requested from two appropriate persons.

After committee review of the application data and upon recommendation for admission, the Graduate College will:

1. Assign program status and inform the student of it immediately.
 - a. Full status will be granted to those who meet all admission requirements.
 - b. Provisional status may be granted to those who do not fully qualify on some requirements. At the conclusion of the first term of enrollment, the status will be re-evaluated.
 - c. Admission will be denied students whose qualifications do not meet the requirements and if the admissions committee decides provisional status is not warranted. The appropriateness for this program of an applicant's goals will be considered in the decision to admit or not.
2. Assign an adviser to assist in developing a degree program and registering for the first term.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: applicant's goals; supervisory committee; application for degree candidacy and final oral examination.

DEGREE PROGRAM SUPERVISION

For the first enrollment, the program director will aid the student in developing a class schedule in keeping with degree requirements. Prior to enrolling for a second term, the Graduate College will appoint a Supervisory Committee consisting of a chairperson and two to four other members of the graduate faculty. This committee will help the student prepare a total program plan in keeping with the degree requirements and the student's special needs. This plan must be completed before enrollment for a second term. The committee will also approve and supervise the student's field study, administer a comprehensive examination and recommend the awarding of the degree.

REQUIREMENTS FOR THE ED.S. DEGREE

Prior to the award of the Ed.S. degree, the following requirements must be met.

1. Completion of an approved degree program with an overall grade point average of at least 3.25.
2. Filing of an "Intent to Graduate" form at least seven weeks prior to the expected graduation date.
3. Completion of a comprehensive examination, written and/or oral, at least three weeks prior to graduation.
4. Filing of an approved field study report and abstract at least one week prior to graduation.
5. Recommendation for the degree by the supervisory committee.

TRANSFER OF CREDIT

A maximum of 18 semester hours of graduate credit may be transferred from UW System Institutions (which may include nine credits from other institutions) to meet the requirements of the Ed.S. degree. It must be appropriate to the degree program and awarded by an institution accredited for graduate level work. All credit to be counted toward the degree must have been completed within seven years of the date the degree is awarded.

RESIDENCE REQUIREMENTS

Students may choose either of the following two options to meet the minimum graduate residency requirement.

Residency option 1: One term of residence in which at least six credits are earned on the Stout campus excluding the field study.

Residency option 2: Completion of a series of intensive, structured graduate seminars designed to meet expected outcomes of residency experiences.

TIME LIMITS

All degree requirements, including transferred credit, must be completed within a seven-year period.

CURRICULUM

Content for the advanced degree program will be drawn from three bodies of knowledge: foundations, research and professional study. Selection of these three components is based on the assumption that the holder of an advanced degree should be a practicing professional, capable of solving problems through applied research techniques and a scholar in his profession.

The three components are shown below with a listing of the required courses for the program. The 700-level numbered courses are open to all graduate students. The 800-level numbered courses are intended primarily for post-master's degree work.

PROGRAM PLAN

To qualify for the degree of Education Specialist, the student must earn not less than 36 semester credits beyond the master's degree which will be distributed as follows: selectives will be planned with the program adviser and supervisory committee to ensure the most appropriate program for each student.

Foundations (9-10 Cr.)	Credits
387-710 Sociological Foundations for Guidance.....	3
Selectives.....	6-7
Research and Evaluation (3-6 Cr.)	
421-816 Instrumentation for Research	3
421-742 Program Evaluation	3
Professional (20-24 Cr.)	
413-800 Field Study.....	6
Selectives.....	15

LEARNING RESOURCES

Dr. David P. Barnard, Dean
 Dr. Harry A. Herbert, Assistant Dean
 Mr. John A. Jax, Assistant Dean

MEDIA TECHNOLOGY

Dr. David L. Graf, Program Director

GRADUATE RESIDENT PROGRAM FACULTY

Mr. Thomas Allen, Assistant Professor	Dr. Thomas Franklin, Associate Professor
Dr. David Barnard, Professor	Dr. Richard Gebhart, Professor
Ms. Mary Donley, Associate Professor	Dr. David L. Graf, Associate Professor

Dr. Joseph Hagaman, Professor
Dr. Roger Hartz, Assistant
Professor
Dr. Harry A. Herbert, Professor
Dr. John M. Houle, Professor
Dr. Terrance R. Ingram, Professor
Mr. John J. Jax, Professor
Dr. Gordon Jones, Professor

Dr. Orville Nelson, Professor
Dr. Mary Rains, Associate Professor
Mr. Philip Schwarz, Associate
Professor
Dr. Lorry Sedgwick, Professor
Dr. Lee Smalley, Professor
Mr. Robert Ward, Assistant
Professor

Master of Science Degree. This degree program is designed to prepare the student for a professional career in media technology. At the completion of the program, the student will be qualified to plan, produce and utilize materials, to teach courses in media technology, and to develop, supervise and administer media programs in education, industry and government. Stout graduates are serving in such capabilities through the United States and in foreign countries.

Learning experiences in the immediate professional setting include the media technology internships.

PRIMARY EVALUATION PROCESSES

In addition to the all-university requirements of (1) course grades as assigned by the faculty, (2) advisement of the Creative Intellectual Inquiry Experience and (3) certification of degree program completion by the program director, the following Program Specific Primary Evaluation Processes are used: student advisement; substantive work in major and program plan.

ADMISSION

To be admitted with full status to this program, the applicant must hold a bachelor's degree from an accredited college and have an overall grade point average of at least 2.75.

The student should possess a valid teacher's certificate or sufficient credits to qualify for a teaching certificate if they plan to seek certification and employment in the media area in the elementary and secondary schools.

A deficiency in these admission requirements does not preclude admission, but it may require completion of additional undergraduate work and/or increase the amount of graduate credit required to earn the degree.

REQUIREMENTS

The requirements for this degree include: (a) completion of at least 32 semester hours of graduate credit with an overall graduate grade point average of 3.0 or better; a minimum of 15 credits must be in courses open only to graduate stu-

dents 700 level and above; (b) approval for degree candidacy at the appropriate time; and (c) a course distribution as outlined below:

Required Courses (11 Cr. or verified previous competence)		Credits
600-504	Elementary Photography	2
600-560	Audio-Visual Communications*	2
600-561	Preparation of Audio-Visual Materials*	2
600-630	Audio/Film/TV Production Fundamentals	3
600-740	Instructional Development	2

Required Research Preparation (7-11 Cr.)		
421-740	Research Foundations (and)	4
600-718	Introduction to Problems in Media Technology (and)	1
600-722	Problems in Media Technology (or)	2
600-770	Thesis: Media Technology	6

Elective Theory Preparation* (4 Cr. minimum)		
199-534	Task Analysis	2
421-738	Elementary School Curriculum (or)	2
421-739	High School Curriculum	2
421-750	Curriculum Theory and Practice	2
421-811	Structuring Knowledge	2
479-581	Industrial Psychology	2
479-730	Advanced Psychology of Learning	2
Others through adviser's consent		

*Wisconsin Certification requires at least two semester hours of credit in curriculum at the level (elementary or secondary) at which the applicant is not certified as a teacher. Courses numbered 421-738 or 421-739 are required for Audio-Visual Director Certificate in Wisconsin.

Elective Technical Courses (6 Cr. minimum)		
195-733	Impacts of Technology	2
326-516	Technical Writing For Industry	3
354-640	Computer Use in Education	3
354-741	Computer Programming Techniques	2
391-554	Television Programming and Performance	3
600-535	Film: History and Appreciation	3
600-573	Educational Television Utilization	1
600-605	Advanced Photography	2
600-615	Micrographics Fundamentals	1
600-625	Broadcast TV Production Internship	1-4
600-632	Television Production	2
600-645	Color Photography	2
600-655	Slide/Tape and Multi-Image Production	2
600-710	Media Reference Fundamentals	2
600-715	Media Selection	2
600-717	Media Equipment	2
600-720	Media Cataloging and Organization	2
600-730	Media Retrieval Systems	2

600-732	Planning Media Facilities	2
600-760	Educational Media Administration*	2
600-788	Media Technology Internship	1-8
600-790	Seminar:	1-3
600-799	Independent Study	1-2
	Others through adviser's consent	

Elective Professional Preparation (4 Cr. minimum)

150-600	Organizational Leadership	3
198-550	Introduction to Industrial Training	2
320-720	Labor and Industrial Relations	2
421-702	Principles of Supervision	2
421-726	Administration	2
479-579	Public Relations	2
479-582	Personnel Management	3

*Courses required for Audio-Visual Director Certificate in Wisconsin.

GRADUATE FACULTY

In addition to the regular appointments listed by program, the following special appointments to the Resident Graduate Faculty have been made.

School of Industry and Technology

Dr. Robert Berkemer
Mr. W. Charles Carlson
Ms. Dorothy Dale
Mr. Leo Weaver

School of Home Economics

Dr. Mary E. Thompson
Dr. Carol Wilson
Dr. Jerry Kinnaird

School of Liberal Studies

Mr. Gene Bloedorn
Ms. Natalie K. Bothwell
Mr. Fred C. Breisch
Ms. Esther Faris
Dr. Evelyn G. Jenson
Mr. Frank S. Kennett
Mr. Eino E. Maki
Mr. William F. O'Neill
Ms. Helen Quinn
Ms. Donna G. Roe
Mr. John T. Romoala
Mr. John Sabol
Dr. Susan Thurin
Mr. Richard J. Tyson
Dr. Ronald H. Verdon
Dr. Martha Wallen

School of Education & Human Services

Dr. Thomas Blakemore
Dr. Charles Coker
Dr. Thomas Czerlinsky
Ms. Colleen Esser
Ms. Karen A. Hodgson
Dr. Mary Hopkins-Best
Ms. Diane Iverson
Mr. Jerry M. Jorgeson
Mr. Jeb Kaiser
Dr. Maribeth Kasik
Mr. Paul M. McCray
Ms. Laura Most
Mr. Allen J. Noll
Dr. Dan Paulson
Ms. Margaret K. Russert
Ms. Barbara Sedgwick
Ms. Jill Stanton
Mr. William C. Stewart

Learning Resources

Mr. Brooke Anson
Ms. Rosemary Jacobson
Mr. John J. Lauson
Ms. Brenda Swannack

COURSE DESCRIPTIONS

COURSE NUMBERING SYSTEM

Stout uses a six digit numbering system. The first three digits designate the school and department offering the course. The fourth digit indicates the level of the course. While 500-699 courses may carry graduate credit, such credit is generally awarded **only** to students in graduate degree programs with the approval of their adviser. 700-899 courses may be taken for graduate credit only. 800-899 courses are intended for students admitted to education specialist degree programs. Admitted candidates for master's degrees may also be permitted to enroll.

Campus-Bound Courses: Those identified by department chairpersons and administrators as those that can be taught only on the campus at Stout for such reasons as need for specialized laboratory facilities, need for the Stout faculty expertise, access to the library and the like. The list is updated biannually through the school deans and is approved by the Vice Chancellor. A list is maintained in the Graduate College office. Those in this category as this bulletin goes to press are identified at the end of the course description with CB.

INDUSTRY AND TECHNOLOGY (1)

- 100 Interdepartmental
- 110 and 140 Energy and Transportation
- 130 Graphic Communications
- 150 Industrial Management
- 160 Business

- 170 Materials and Processes
 190, 195, 196, 198 and 199 Industrial and Marketing Education

HOME ECONOMICS (2)

- 200 Interdepartmental
 212 Human Development, Family Living and Community Educational Services
 214 Apparel, Textiles and Design
 229 Food Services and Nutrition
 242 Human Development, Family Living and Community Educational Services
 245 Habitational Resources

LIBERAL STUDIES (3)

- | | | | |
|-----|--------------------|-----|---|
| 303 | Anthropology | 354 | Applied Mathematics |
| 304 | Art | 355 | Mathematics |
| 308 | Biology | 360 | Music |
| 311 | Chemistry | 365 | Philosophy |
| 320 | Economics | 366 | and 367 Physical Education
and Athletics |
| 326 | English-Journalism | 372 | Physics |
| 328 | French | 375 | Political Science |
| 335 | Geography | 387 | Sociology and Social Work |
| 338 | History | 391 | Speech |

EDUCATION AND HUMAN SERVICES (4)

- 405 Art Education
 413 Counseling and Personnel Services
 416 Distributive Education
 421 Education
 431 Special Education
 459 Vocational Rehabilitation and Manpower Services
 479 Psychology
 489 School Psychology

ACADEMIC AFFAIRS (5)

MEDIA TECHNOLOGY (6)

COURSE SCHEDULING

A letter system has been developed to help students plan course schedules. Letters following course descriptions indicate when a course is **usually** offered. F-Fall Semester; W-Winter Semester; S-Summer Session; SO-Summer Session odd numbered years; SE-Summer Session even numbered years. Courses not lettered follow no usual pattern. The system does not guarantee that a course will be offered during a particular semester.

INDUSTRY AND TECHNOLOGY

100-500 Introduction to Futures Study 2 Cr. Methods of future projection, orienting thought toward future alternatives; impact of future problems on major areas of human activity. F

100-525 Advanced Futures Study 1 Cr. Student-designed futures study based on application of methods to student's program area. Prerequisite: 100-500.

100-590 Technical Service Schools .5-6.0 Cr. Some special-purpose technical courses offered by manufacturers are suitable for college credit. Guidelines: 1) student makes all arrangements with manufacturer offering course; 2) one credit is awarded for each full week (40 clock hours) of attendance; 3) student enrolls and pays fees at university prior to taking course; 4) approval of Dean of S.I.T. needed before enrolling for credit; 5) Graduate College approval required for students taking course for graduate credit. S

110-505 Energy Alternatives 2 Cr. Present and future energy sources, conservation, use in home, transportation and industry. F-W

110-506 Energy Management 2 Cr. Evaluate industrial facilities and equipment for energy efficiency and feasibility of modification for improving consumption; current and alternative techniques for overcoming energy loss. F-W

110-511 Carburetion and Emission 2 Cr. Operational principles, diagnostic proce-

dures and defective component repair of fuel and emission control systems. Prerequisite: 110-411. W

110-517 Applied Integrated Circuits 3 Cr. Application of integrated circuits in analog/digital systems: analog measurement, data conversion and introduction to microprocessors. Prerequisite: Ten credits in Physics and/or Electronics. W

110-522 Emission Control 1 Cr. Causes, control methods and related diagnostic procedures for domestic and foreign automotive emissions. F-W

110-523 Service Management 2 Cr. Auto service management, planning and layout of service facilities, selection of tools and equipment, and development of curriculum and/or work schedule. W

110-541 Digital Logic Systems 3 Cr. Digital circuit design and analysis using counters, registers and logic gates. Semiconductor memories random access memories, read only memories, analog to digital converter, and digital to analog converters, arithmetic logic unit, multiplexers and demultiplexers. Prerequisite: 110-473.

110-542 Computer Applications in Electronics 3 Cr. Microprocessor application at a system level. Use of hardware and software design aids such as: assemblers, text editors, compilers, read only memory emulators and system projects related to specific microprocessors. Introduction to the 16 bit microprocessors, 8 bit slice processors, signal processors and controllers. Prerequisite: 110-575.

110-543 Linear Circuits 3 Cr. Linear discrete and integrated solid-state devices used in amplifiers, oscillators, other practical circuits. Application and use of selected laboratory equipment and devices. Prerequisite: 110-343. F-W

110-551 Introduction to Microprocessors 3 Cr. The examination of the working components of a simple microprocessor system, machine language programming, registers, memory, input-output and application such as: security, energy monitor, control, communication, transportation, etc. Prerequisites: 300-101 and basic electronic background or equivalent. F-W

110-552 Electronic Communications 3 Cr. Electrical/electronic communication systems; modulation, demodulation, r.f. and i.f. amplifiers, alignment, antennas, composite TV signal, receivers, transmitters. Prerequisite: 110-204. F

110-553 Instrumentation and Control 3 Cr. Industrial measurement, control, open loop, closed loop, analog, digital, electric/electronic, fluidic, mechanical, pneumatic. Prerequisite: 110-371. W

110-554 Electronics/Robotics 3 Cr. Robotic power and control systems, including base power sources, microprocessor controllers, data handling and programming. Special features such as voice synthesis, motion detection, light detection and noise detection are overviewed. Prerequisites: 110-551, 110-204.

110-556 Digital Circuits 3 Cr. Logic gates; Boolean algebra; number systems, codes and operations; combinational, sequential, arithmetic logic, memories. Prerequisite: 110-343. F-W

110-573 Computer Technology 4 Cr. A detailed investigation in the design, manufacture and operation of computer and peripheral integrated circuits, including microprocessors, microcomputers, ROM, RAM, EPROM, bubble memory and various LSI circuits. Prerequisites: 110-517, 372-518, or equivalent. F

110-574 Microprocessor Fundamentals 3 Cr. Overview of present day microprocessor technology. Function, analysis and operation of selected microprocessors. Memory, input/output interfacing devices. Basic machine/assembly and structured language programming and hardware application. Prerequisite: 110-371.

110-575 Microprocessor Interfacing 3 Cr. Interfacing principles of microprocessor based microcomputer systems. Input/output techniques, input/output mapping, asynchronous/synchronous communication, parallel/serial conversion. Microprocessor application such as control systems, energy monitor, cooking and communications. Prerequisite: 110-574.

110-582 Electronic Communication Systems 3 Cr. Modern communication systems including transmission lines, wave guides, electromagnetic propagation, basic antenna theory. Introduction to digital communication including bit error probability, digital filtering, pulse code modulation and error detecting and correcting codes. Prerequisite: 110-482.

110-583 Fundamentals of Control 4 Cr. Analysis of elementary control systems via classical and Laplace transform techniques, frequency response and root locus plots, block diagrams and transfer functions, open and closed loop systems, stability considerations, digital to analog conversion, microprocessor based con-

trol systems. Prerequisites: 110-280, 110-574.

110-584 Microwave Systems 3 Cr. Introduction to microwave theory, devices and applications, transmission lines and antennas, waveguides and associated components, microwave tubes, microwave solid state devices, MASER's, LASER's and basic concepts in infrared radiation and detection. Prerequisite: 110-482.

110-585 Electric Power Distribution 3 Cr. Characteristics of large scale commercial power distribution systems, properties of transmission lines, power and frequency control in interconnected systems, load flow analysis using symmetrical components, fault analysis and load shedding techniques, stability, underground power transmission and DC power transmission. Prerequisites: 110-280, 110-372.

110-586 Instrumentation 3 Cr. Descriptive and analysis of thermal, mechanical, acoustic, optical, pneumatic and electromagnetic sensors, measuring systems, calibration, performance of measuring systems, analog and digital signal conditional. Measurement of frequency and time and analysis and performance of display units. Prerequisite: 110-583.

110-595 Seminar 1-2 Cr. Specific content is designed to upgrade competencies of participants. Content will change to reflect current state-of-the-art in electricity/electronics or power mechanics. F-W

110-603 Problems in Power Transmission 3 Cr. Analysis of power transmission problems. Recommendation of alternate solutions including advantages, disadvantages and economic considerations. Prerequisites: 110-240, 110-260, 110-303, 110-348, 110-548 or consent of instructor. W

110-614 Transmission and Drive Trains 2 Cr. Power transmission through gears, clutches and drives common to the automobiles. Fluid couplings, gear sets, differentials, transmissions and drive lines. Prerequisite: 110-314. W

110-615 Engine Machining and Rebuilding 3 Cr. Rebuilding of fourstroke cycle engines including all necessary precision machining; cylinders, blocks, valve trains and reciprocating parts. Prerequisite: junior standing. F-W

110-622 Automotive Practicum 2 Cr. Troubleshooting and servicing all automobile functions as typically done in an auto service facility. F

110-630 Aviation/Aerospace Studies 3 Cr. Classroom, field and optional flight experiences relating to aviation and aerospace industries; details of space exploration, federal licensing regulations, air traffic control and related career guidance information. F

110-631 Private Pilot's Ground School 3 Cr. Preparation for F.A.A. Private Pilot's Certificate: airplane utility, flight manuals, safety, federal aviation regulations, navigation, communication, weather, general aircraft operation and flight theory. F-W

110-635 Introduction to Flight 2 Cr. Flying a single-engine aircraft: applied flight theory, dual flight instruction and solo flight. Prerequisite: 110-631.

110-640 Techniques for Network Analysis 3 Cr. Differential equations applied to electric circuit parameters, network equation solutions using digital and analog computers. Prerequisites: 110-204 and 355-255. W

110-683 Control Systems 3 Cr. Introduction to modern control theory, state variable theory of control systems, controllability and observability, stability of linear and nonlinear systems, discrete time control systems, elementary concepts of optional control systems, control law implementation using microprocessors. Prerequisites: 110-583, 355 275 (corequisite).

110-689 Development Practicum 4 Cr. Project research and design, specification control drawing documentation. Project construction and a technical paper presentation. Prerequisite: advanced standing.

110-695 Automotive Service Experience 2 Cr. Off-campus job in garage or dealership provides skills and knowledge of automotive servicing beyond classroom and laboratory work. W

110-702 Recent Developments in Power Technology 2 Cr. Study of recent changes in the field of power technology design to provide the teacher with competencies related to these changes with respect to his needs as a teacher. Prerequisites: graduate standing, minimum of four semester hours of credit in Power or consent of chairman of Power Technology Department. F-W-S

110-798 Problems in Energy and Transportation 2-6 Cr. Substantive study and activity for specialists in the energy transportation field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in power technology. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisites: 190-739, concurrent registration, consent of department chairperson. F-W-S

130-504 Communications and Information Systems 1-3 Cr. Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information. Prerequisite: 130-103. F-W-S

130-513 Technical Rendering 2 Cr. Graphic representation of technical information for professional or public audiences by use of various rendering techniques, mediums and image generation processes. W

130-526 Building Construction Specifications 2 Cr. Construction specification organization and basic specification preparation skills; role of specifications in building process and relationship of specifications to other construction contract documents. F-W

130-527 Site Engineering 2 Cr. Use of surveying instruments, techniques and computation to measure and describe land configurations; construction surveying including contours, grades, cut and fill, and drainage; soil analysis. Prerequisites: 130-110 and trigonometry. F-W-S

130-528 Structural Design 3 Cr. Analysis, selection and delineation of concrete, steel and wood structural components and systems in buildings. Prerequisite: 130-291 or 372-325. F

130-532 Mechanical Design 4 Cr. Analysis and design of machine elements: gearing bearings, shafting and friction devices. Prerequisites: 130-230 or 130-593, 372-325 or 130-291, 355-153 or 355-156. W

130-537 Mechanical Design Drafting 2 Cr. Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings. Prerequisite: 130-311. F

130-543 Graphic Arts Production Techniques 2 Cr. The study of techniques associated with the production of two-dimensional printed media, with emphasis on design, production and evaluation, also including client and printer relationships. Prerequisite: 130-366. F-W-S

130-557 Color Separation 2 Cr. Color separation from reflected and transmission copy; filters and densitometry; direct and indirect photographic color separation methods. Prerequisite: 130-355 or consent of instructor. W

130-561 Screen Printing .5-2.0 Cr. Screen printing technology-applications, components and techniques. Survey of various materials and equipment used in screen printing. Production of screen printed products. Prerequisites: 130-140 or 214-592 or 304-518, the above courses or consent of the instructor is required. F-W

130-592 Mechanics of Machinery I 3 Cr. Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration. Prerequisites: 130-290 and 355-154. W

130-593 Mechanics of Machinery II 3 Cr. Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces. Prerequisite: 130-592. F

130-595 Seminar 1-2 Cr. (Title will reflect specific graphic and industrial communication content). Current and projected communication methods, concepts, technologies and innovations in graphic communications. S

130-629 Land Use Planning 3 Cr. Area planning; problems in design of building complexes; exterior space, land use, relationships between buildings and supporting facilities; contemporary regional and city planning and its historical roots. Prerequisite: 130-325. F-W

130-636 Computer Assisted Design Problems 2 Cr. Computers in drafting and plotted design, design automation, mechanical design problem analysis for computers, mathematical and simulation models. Prerequisites: 130-230 and 354-141. W

130-718 Recent Developments in Industrial Graphics 3 Cr. The implementation of teaching currently accepted drafting theories and concepts as practiced by modern industry. New developments in materials and hardware and their utilization within the curriculum. Prerequisite: graduate standing or minimum of ten semester hours of credit in industrial graphic field or consent of the chairman of the Industrial Graphics Department. S

130-798 Problems in Industry and Technology 2-6 Cr. Substantive study and activity for specialists in the graphic arts field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in graphic arts. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisites: 190-739 and consent of department chairperson. F-W-S

140-574 Alcohol, Drugs and Accident Prevention 2-3 Cr. Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers. SO

140-575 Behavioral Approach to Accident Prevention 2-3 Cr. Behavioral aspects of

accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior. SE

140-580 Driver Education for the Handicapped 2-3 Cr. Curriculum content, instructional methods and techniques, legal implications, driving aids and financial assistance; lab work in teaching handicapped people to drive. S

140-581 Principles of Occupational Safety 2-3 Cr. Overview of occupational accident prevention programs: techniques of measurement, cost of accidents, locating and identifying accident sources and problems of selecting corrective action. Prerequisite: junior standing. F-W-S

140-583 Voluntary OSHA Compliance 2-3 Cr. Implications of Federal Occupational Safety and Health Act of 1970 on industrial operations, systematic self-inspection and compliance procedures. F-S

140-584 Safety Engineering Standards 2 Cr. Analysis of legal and voluntary industrial workplace standards and regulations. F

140-586 Fire Protection/Prevention 3 Cr. Behavior of fire: chemistry, protection, prevention and control. W

140-587 Human Factors Engineering 3 Cr. Man's physiological and psychological abilities in man/machine interface, working performance, reliability, comfort and safety; effective design of man and work environment as a cybernetic system. Prerequisites: 479-110, 354-130 or consent of instructor. F

140-588 Construction Safety 2 Cr. Analysis of hazards, control procedures and

systems related to typical construction equipment, tools and materials safety problems. F-W

140-589 Fleet Safety Management 2 Cr. Controlling loss associated with motor fleet operations: selection, training and supervision of commercial drivers; regulatory controls. W

140-590 Products Liability 2 Cr. An analysis of products liability losses, laws and controls. W

140-781 Risk Management in Loss Control 3 Cr. An in-depth view of workers compensation, liability (general products) and property insurance, with respect to their respect on safety and health loss control. F

140-782 Safety Management 3 Cr. An in-depth study and application of current administrative, organizational, and supervisory practices, which are specifically and uniquely related to managing industrial or occupational accident prevention and loss control programs. W

140-783 Field Problem in Accident Prevention/Loss Control 3 Cr. An operational experience which requires identification of a technical and/or administrative problem in an occupational setting. The problem is researched, analyzed for alternative operational countermeasures, and field tested to determine the effectiveness of the solutions. F-W

140-784 Safety Internship 1-6 Cr. Full-time, supervised work and learning experience in an appropriate professional setting. F-W-S

140-785 Seminar in Safety 2 Cr. Current topics, trends and methods in loss con-

trol will be examined, discussed and evaluated. W

150-500 Engineering Economy 2 Cr. Source and application of funds; cost control, valuation, depreciation, replacement theory and taxation. F-W-S

150-501 Seminar 1-2 Cr. (Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled. F-W

150-502 Time Management 1 Cr. Elements of time management, strategies and techniques in industrial and business environments. Analysis of time use by all levels of management.

150-505 Product and Inventory Control 3 Cr. Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling material, parts, sub-assemblies, and final assemblies of a manufacturing system. Prerequisite: 150-200 or 354-130 or 354-530. F-W

150-510 Production Processing 3 Cr. Production processes, especially product design as related to economic production; factors that influence choice and sequence of process to obtain end product. Prerequisite: 150-200. F-W

150-514 Industrial Enterprise Practicum 3 Cr. Organization and operation of an industrial company; election, designing, production planning, production, marketing and distribution of a product. Prerequisite: 150-115 or 150-150. F-W-S

150-520 Quality Assurance 3 Cr. Practical and statistical quality control in design and use of Quality Assurance Programs: Quality Engineering,

Manufacturing Quality Assurance and Product Quality Assurance. Prerequisites: 150-200, 354-130 or 354-530. F-W-S

150-530 Material Handling 3 Cr. Principles of material handling; handling function, its role in production activities and problems of handling materials in industrial settings. Prerequisite: 150-200. F-W

150-540 Time and Motion Study 3 Cr. Methods engineering in business and industry; improving methods of performing and measuring work done by individuals or groups through motion analysis, charting techniques and principles of motion economy. Prerequisite: 150-200. F-W-S

150-550 Plant Layout 3 Cr. Principles and methods of solving plant layout and material handling problems. Prerequisite: 150-200. F-W

150-570 Estimating and Analyzing Construction Costs 3 Cr. Estimating and analyzing material, man-hours, equipment, methods of construction, overhead and profit and submitting these factors in the form of a bid. Prerequisites: 150-X98 and junior standing. F-W

150-600 Organizational Leadership 3 Cr. Supervisor's role in attaining organizational objectives through human resources management; supervisory skills of communication, motivation, initiation of change, discipline, delegation and grievance handling developed on basis of organizational and individual behavior concepts. Prerequisite: senior or graduate standing. F-W-S

150-605 Production and Inventory Control Practicum 2 Cr. Application of principles and techniques learned in 150-505 as part of Professional Semester/Manu-

facturing Laboratory. Prerequisite: 150-505.

150-620 Quality Assurance--Practicum 2 Cr. Application of principles and techniques learned in 150-520, as part of Professional Semester/Manufacturing Laboratory. Prerequisite: 150-520.

150-630 Quality Circles 2 Cr. Background and history of participative management in Japan and America, orientation as to the structure and sequential development of quality circles, industrial quality control data gathering techniques, problem solving methods, organizational politics, and meeting management methods simulated and analyzed. S

150-640 Time and Motion Study Practicum 2 Cr. Application of principles and techniques learned in 150-540, as part of Professional Semester/Manufacturing Laboratory. Prerequisite: 150-540.

150-650 Introduction to Operations Research 3 Cr. Business and industrial applications of operations research techniques using linear programming, decision models and Monte Carlo methods; problem applications in allocation, sequencing, waiting lines and competitive strategies. Prerequisite: 150-200. W

150-660 Industrial Management 2 Cr. Principles and methods of analyzing and solving industrial problems; application through case studies, management games and special problems. Prerequisite: senior standing. S

150-670 Systems Approach to Construction Management 3 Cr. Total concept of construction industry: contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques. Prerequisite: 150-570. F-W

150-680 Production Management Practicum 2 Cr. Application of principles and techniques of analyzing and solving production management problems learned in prior course work to manufacturing project in manufacturing laboratory. Prerequisite: consent of instructor. F-W

150-700 Systems Analysis and Design 3 Cr. A survey of design approaches to industrial research. Application of appropriate research tools to analyze and design jobs, organization, operating systems and product/ market studies. Prerequisite: graduate standing. F-W

150-710 Seminar in Industrial Operation 2 Cr. Discussion of current theory and practice of operation of engineering, marketing, manufacturing, financial administration and industrial relations aspects of industry. These integrated systems will be analyzed based upon the management of objectives concept. Prerequisite: graduate standing. F-W

150-720 Foundations in Industrial Operations 2 Cr. This course is designed to improve the student's competencies in all aspects of industrial technology. A major professor will be identified who will serve as a tutor in guiding the student's self-development program. There will be a culminating matriculation to candidacy examination to assure minimum proficiency standards. Prerequisite: graduate standing. F-W-S

150-730 Advanced Technical Problems--Industrial Management 2-6 Cr. Advanced study in industrial management, management control, product development or process and facility planning. Recent developments, advanced technical work, experimental work, and technical reports. A specific problem area for study in this course must be identified by the student prior to registering for this course. F-W-S

150-740 Introduction to Decision Theory 3 Cr. Application of quantitative methodology to the solution of industrial problems. Prerequisite: graduate standing. W

150-750 Organizational Development 3 Cr. Change agent skills for middle managers and external consultants to facilitate organizational health. Assessment, diagnosis, intervention, team building, and coaching of key organization personnel. Emphasis on practical methods for the development of various types of organizations. Prerequisite: 150-600 or consent of instructor. S

150-760 Corporate Planning 2 Cr. Introduction to corporate planning, strategy and policy. Orientation to generalized planning process and the outputs of planning system. A discussion of planning decision sub-system, strategic information sub-system, planning organizational sub-system and planning management sub-system. Prerequisite: consent of instructor. F-W

150-780 Problems in Management Technology 2-4 Cr. Identification, selection and completion of a problem in management technology culminating in a Plan B paper. Prerequisites: consent of instructor and approval of major advisor. F-W-S

150-790 Field Project 3 Cr. A capstone experience to integrate and synthesize previous learnings within the context of an industrial environment. The total integrated systems approach will be applied to an industrial project. This may be either research in a simulated multifactor industrial situation or an internship assignment. Prerequisite: consent of instructor. F-W-S

160-520 Seminar 1-3 Cr. Current topics in business. (Title will reflect specific business content).

160-573 Legal Aspects of Construction 3 Cr. Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker. F

160-585 International Marketing 3 Cr. Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms. Prerequisite: 160-330.

160-601 Legal Environment of Business 2 Cr. Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control. F-W

160-679 Marketing Research 3 Cr. Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. Prerequisites: 160-330 and 320-325. F-W

160-690 Administrative and Business Policies 3 Cr. Integrates previous business studies, develops ability to solve business problems through scientific approach to decision-making. Business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel and public relations functions. Prerequisites: 160-330 and 160-340 and senior standing. F-W

160-746 Marketing for Nonprofit Organizations 2 Cr. Basic marketing principles applied to the nonprofit organization. Special attention to research techniques, image measurement, promotional strategies and marketing objectives. F-W

170-504 Computer Aided Manufacturing 3 Cr. Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation. Prerequisites: 170-101, 170-202 and 354-141 or consent of instructor. F-W

170-505 Robotics 2 Cr. Capabilities of and justification for industrial robots; lab work with robots and simulators in processing, assembly and materials handling. Prerequisites: 170-101 or 170-202 and 170-504 and 354-141 or consent of instructor. F-W

170-506 Maintenance of Processing Equipment 3 Cr. Recondition, identify and correct common malfunctions of hand and power woodworking and metalworking equipment; manufacturers' performance specifications, cutting tool specifications and preventive maintenance schedules; selection of hand tools, power equipment, measuring instruments and safety devices. F-W

170-510 Manufacturing Systems 3 Cr. Dedicated, flexible, and standard manufacturing systems. Selection and application of standard production components and tooling to produce and evaluate a given product. Emphasis on integrated inspection, part transfer, production, and robot application. Prerequisite: 170-504.

170-515 Metallurgy 3 Cr. Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys. Prerequisite: 311-115. F-W

170-537 Numerical Control in Manufacturing 1-3 Cr. Investigation and justification of numerical control of machine tools; types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting; working knowledge of basic machining processes recommended. Prerequisite: 170-101 or 170-202. F-W

170-559 Foundry Seminar 1-2 Cr. Metallurgy principles relating to casting processes; sand testing, phasing diagrams, fluid mechanics, gates, risers, gating systems, inspection, non-destructive testing.

170-560 Aircraft Construction Workshop 1-3 Cr. Thorough study of proved plans precedes completion of assignments in fabrication of parts, assembly, rigging, powering and finishing full-scale aircraft. Prerequisite: consent of instructor or degree in Industrial Education. S

170-565 Welding II 2 Cr. Advanced work in arc and oxy-acetylene welding techniques; vertical, horizontal, overhead positions; destructive and non-destructive testing; MIG and TIG welding processes; oxy-acetylene machine and air carbon arc cutting. Prerequisite: 170-365. W

170-570 Mechanical Systems 2 Cr. Plumbing and electrical requirements for residential and commercial buildings. Prerequisite: 170-370. W

170-575 Building Construction Practicum 2-4 Cr. Technical information, construction problems and actual development of light residential structure. Prerequisite: 170-270. S

170-580 Packaging Development 3 Cr. Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer. Prerequisite: 170-480. F-W

170-585 Packaging Seminar 2 Cr. Current packaging problems or developments (subject based on students' interests and current issues). Prerequisite: junior or senior standing in Packaging. F-W

170-595 Seminar 1-2 Cr. (Title will reflect specific materials and processes content.) Designed to upgrade effectiveness of teachers or secondary school materials and processes content.

170-713 Wood Properties I--Structure and Characteristics 3 Cr. A study of the structure, characteristics and physical properties of wood and wood fiber as industrial materials. Testing of physical properties: Static bending, impact, compression, shear, tension and hardness; Moisture content, specific gravity; Dimensional change and micro-macro photography. F-W

170-798 Problems in Industry and Technology 2-6 Cr. Substantive study and activity for specialists in the materials and processes field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisites: 190-739 and consent of department chairperson. F-W-S

190-505 Sport Aviation Seminar 1-3 Cr. Organizational patterns, available alternatives, and recommended procedures for incorporating full-scale aircraft construction in schools.

190-520 Seminar: 1-3 Cr. Current topics in industrial/technology education. Prerequisite: consent of instructor.

190-533 Shop Planning and Equipment Selection 2 Cr. School shop facility planning: equipment selection, placement, care and management. Prerequisite: 190-405, or equivalent.

190-575 Workshop: 1-3 Cr. Current specialized topics in industrial education through experiential activities. Prerequisite: consent of instructor.

190-606 Learning Activities Industrial/Vocational Education 2 Cr. A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects.

190-631 Field Trips to Industry 1-3 Cr. Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught.

190-637 School Shop Organization and Management 2 Cr. Experience in administration, project development and teaching problems associated with industrial education. Prerequisite: 190-205. S

190-638 Course Construction 2 Cr. Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package and/or unit of instruction. W-S

190-704 History and Philosophy of Industrial Education 2 Cr. Evolution of modern industrial education through the people, movements, events and institutions that contributed to its formation. Developments and conditions in education and society also considered plus their relationship to the theory and practices of industrial education throughout the years. F-S

190-708 Issues in Industrial Education 2 Cr. A seminar dealing with selected current issues in industrial arts. Developments of abilities to develop a position and defend it, to be critical without being offensive, and to be professional in an emotional atmosphere. Prerequisite: consent of instructor or teaching experience. W-S

190-710 Curricular Innovations in Industrial Education 2 Cr. Study of current innovative programs and practices in the teaching of industrial arts. S

190-735 Problems in Industrial Education 2 Cr. Identification, selection, and the completion of a problem in industrial education, culminating in a Plan B paper. Prerequisite: 190-740. F-W-S

190-739 Introduction to Problems in Industry/Technology 1 Cr. Study of selection criteria for advanced technical problems in industry and technology, development of techniques appropriate to attacking these problems, identification

of industries and organizations relating to these problems and preparation of a detailed proposal to explore a particular problem. Students should enroll for this during their first graduate enrollment and should plan to take the appropriate lxx-54x, problems in industry & technology during their next enrollment. F-S

190-746 Seminars in Industrial Education 1-3 Cr. Identifying goals and outcomes for the local school; development of immediate and long-range curriculum plans; cooperating with local school administrative units in planning for improvement; use of the new Wisconsin curriculum guide for industrial education; initial preparation of individual courses of study for the local school program using behaviorally stated objectives. Prerequisite: Possession of a valid contract to teach and intent to teach in a particular local school unit, in which at least 75% of the local school industrial education teachers will also be participating in this seminar/workshop.

190-770 Thesis--Industrial Education 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major director. F-W-S

190-890 Field Study in Industry and Technology 6 Cr. A study which provides the graduate student with the opportunity to: (1) explore in-depth the body of knowledge associated with his substantive teaching field in industry and technology, (2) provide an educational experience for implementing this knowledge

into the classroom situation, and (3) devise methods to determine if this methodology has brought about desired behavioral changes.

195-500 Evolution of Technology 2 Cr. Contemporary technology: how things got to where they are, and where they might go from here. Relationships between mechanical and social inventions and technology's role in human and institutional behavior.

195-520 Technological Advances--Fast Forward I 2 Cr. Outlines industry's rapid advancements in high technology as utilized in the world today. Reference is made to a variety of applications of this technology now and in the future. F-S

195-521 Technological Advances--Fast Forward II 2 Cr. Current applications of technology in today's society. Discusses how technological advances have affected educators through simulation, society through technological changes such as storing information, television communication and other new technological advances. W-S

195-532 Futures of Technology 2 Cr. Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer. F

195-540 Future of Work 1 Cr. Future possibilities as to why people work, who works, the kind of work and in what conditions. Project probable work environments and results of current trends.

195-733 Impacts of Technology 2 Cr. A contemporary, historical and futuristic look at some of the economic, sociological, psychological and political implications of industry and technology. Students

will identify and investigate several impacts of industry and/or technology to show depth of understanding and relationships between them. F-S

196-501 Simulation in Distributive Education--Model Stores 3 Cr. Designed to develop methods, techniques, questions, activities and resources that center around teaching distributive education via the project method or model store simulation. Prerequisite: 416-201. F

196-555 Marketing and Distributive Education Seminar 2-3 Cr. Designed to update marketing and distributive education undergraduates and graduates (teacher-coordinators) on work experience, new curriculum, student organization competencies, coordination techniques, special needs, and Distributive Education related projects. Will be used to inservice high school teacher-coordinators and VTAE marketing teachers.

196-701 Issues in Vocational Distributive Education 2 Cr. An in-depth study of contemporary issues confronting vocational distributive education. Possible solutions or alternatives will be proposed.

196-702 Improving Distributive Education Methods/Materials 2 Cr. Identification and analysis of instructional needs; design of instructional alternatives; selection and development of instructional packages; and the evaluation and validation of the resulting products in terms of student learning.

198-550 Introduction to Industrial Training 2 Cr. Philosophy, career opportunities, status of training programs, curriculum and program development, methods and evaluation, overview of facilities. F-W-S

198-560 Training Systems in Business and Industry 3 Cr. Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors. S

198-589 Training Internship 2-8 Cr. Designed to provide opportunities for students to learn and practice training management and instructional techniques through the activities and experiences provided while working with a training department. The objectives would be commensurate with the student's background and field of training. Prerequisites: 198-550 or 198-560, GPA 2.5 consent of specialization director. F-W

199-502 Principles of Vocational/Technical/Adult Education 2 Cr. Philosophy, organization and administration of vocational, technical and adult education, nationwide, in Wisconsin and on the local level. F-W-S

199-534 Task Analysis 2 Cr. Analysis techniques utilized in curriculum development. Emphasis on task analyses and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising vocational curriculum or job training programs. F-S

199-537 Competency Based Education--Vocational/Industrial 2 Cr. Competencies for VTAE programs and courses. Development of CBE performance indicators in all domains, a CBE management system, and basis for CBE evaluation.

199-541 Computer Generated Curriculum--Decal 2 Cr. Introduction to DECAL (Digital Equipment Corporation Author Language) programming and its inter-relationship to curriculum. DECAL program writing and editing for lessons and quizzes. Use of related student report files.

199-546 Seminar 1-3 Cr. Current topics in vocational, technical and adult education with application for personnel in the field. Prerequisite: consent of instructor.

199-560 Cooperative Occupational Education Programs 2 Cr. Philosophy, organization, coordination and teaching techniques of cooperative education programs in the various vocational areas. Roles, responsibilities and duties of the cooperative teacher coordinator. Prerequisite: 469-502. F-W-S

199-580 Computer Aided Instruction-Vocational/Technical/Adult Education 2 Cr. Applications of the computer in managing vocational, technical and adult education classrooms and laboratories. Utilization of computers in course preparation, evaluation and methods of teaching. Use of existing software and the evaluation of it. Prerequisite: consent of instructor or computer literacy course.

199-590 Vocational Education: Economic Development Role 2 Cr. The role of the Wisconsin VTAE system in response to rapidly changing technology and the economic climate in Wisconsin.

199-605 Methods of Teaching Vocational Education 2 Cr. Competency-based and individualized approach to methods of teaching vocational education. F

199-611 Individualized Instruction in Practical Arts and Vocational Education 2 Cr. Individualizing instruction as an al-

ternative to conventional methods, organization and evaluation of teaching; especially helpful to teachers in vocational education and practical arts.

199-638 Course Construction for Vocational Educators 2 Cr. Competency-based and individualized approach to principles of course construction for vocational educators. F

199-640 Instructional Evaluation in Vocational Education 2 Cr. Competency-based and individualized approach to instructional evaluation for vocational educators. F

199-674 Adult Education 2 Cr. Philosophy and history of adult education in the U.S. Techniques for teaching adults; psychological factors, methods, adult interests and characteristics.

199-708 Issues in Vocational Technical and Adult Education 2 Cr. An in-depth study of contemporary issues affecting vocational, technical and adult education. Possible solutions or alternatives will be proposed. S

199-710 Coordination 2 Cr. Principles of coordination in vocational, technical and adult education, including apprenticeship training, office education, distributive education, home economics, trade and industrial education, health occupations, technical education, and adult education. Prerequisite: 469-502.

199-736 Problems in Vocational Education 2 Cr. Identification, selection, and completion of a problem in vocational education culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

199-746 Seminar 1-3 Cr. Special topics on current developments in the field. Each seminar devoted to a specific devel-

opment to be indicated with sub-title and description.

199-770 Thesis--Vocational Education 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major director. F-W-S

199-773 Problems in Coordination 2 Cr. Identification, selection and completion of a problem dealing with coordination of vocational, technical and adult education. Prerequisite: 469-710.

199-780 Internship--Vocational Education 4-8 Cr. A planned, supervised experience for M.S. or Ed.S. candidates. To be completed at selected locations capable of providing appropriate experiences. Prerequisite: Approval of director of major and department chairperson. F-W

199-784 Internship--Local Vocational Education Coordinator 4-8 Cr. Supervised field practice in local vocational education coordination. To be completed at selected schools or CESA agencies capable of providing appropriate experiences. Prerequisite: approval of the director of the major. F-W

199-792 Administration-Vocational/Technical/Adult Education 2 Cr. Vocational-technical and adult school operation, legal status, policy making staff personnel, student personnel, programs, public relations, physical plant, business management. Prerequisite: 469-710.

HOME ECONOMICS

200-681 Problems in Home Economics 2 Cr. Course will deal with special problems in depth as initiated by an instructor or according to student needs and interests. This course should serve as a culminating educative experience for students in the various areas of home economics. Prerequisite: consent of instructor.

212-524 Child Development II 3 Cr. Empirical study of physical, intellectual, social and emotional development of children. Prerequisites: 212-124 and 212-264. F-W

212-530 Adulthood and the Family 3 Cr. Study of adults in the family context during the early and middle years. Prerequisites: 212-124, 212-324. W

212-535 Seminar On Self-Growth 2 Cr. Theories of the self; exploration of aspects of self-development and actualization. Prerequisite: 212-350 or 212-524. F-W

212-541 Home-Based Programs in Early Childhood Education 1 Cr. Planning, supervising and implementing a home intervention program for young children and their families. S

212-545 Exceptional Needs and Programming--Early Childhood 2 Cr. Program development and implementation for preschool mentally handicapped children. Prerequisite: consent of department. F-W

212-553 Dual Career Families 1 Cr. The dual career marriage as a form of family

life; benefits and problems encountered. F-W-S

212-554 The Single-Parent Family 1 Cr. Description, statistical trends and problems of single-parent families. F-W

212-570 Singlehood 1 Cr. Experiences of singles; singlehood as a phase in life cycle and as a life-style in contemporary society. Prerequisite: 212-250. F-W-S

212-580 Future of the Family 1 Cr. Experimental and utopian family forms; future of the family. W

212-581 Dynamics of Marital Interaction 2 Cr. Patterns of husband/wife power distribution, task differentiation, decision making, communication, role adaptation and marital satisfaction in family life cycle; theoretical analysis of marital behavior within the family as a social system. Prerequisite: consent of instructor.

212-590 Family Research and Methodology 3 Cr. Analysis of family theory, research methodology, and selected topics in family relations. Prerequisites: 212-250 and 212-350. W

212-595 Special Topics in Human Development 1-2 Cr. Special topics in human development. Prerequisite: junior standing. Repeatable for credit. S

212-598 American Study Tour in Child Development 2 Cr. Study tour of child development centers; discussions, lectures by leaders in field of child development. Prerequisite: consent of instructor. S

212-601 Child and Family Law 3 Cr. Legal issues affecting children and families. Prerequisites: 212-250, 212-350 and junior standing. W

212-607 Parent Counseling 2 Cr. Approaches and techniques for working with parents; observation and experience in childrearing problems parents face. Prerequisites: 212-124 and 212-264. W

212-610 Family Impact Seminar 3 Cr. Content, methods and process of assessing impact of public policy on children and families. Prerequisites: 212-250, 212-350, 375-510 or consent of instructor. W

212-615 Family Stress, Coping and Adaptation 1 Cr. Impact of family development and stress on individual and family well-being. Prerequisite: 212-250. S

212-624 Advanced Child Study 3 Cr. A study of principles and review of literature pertaining to children. Prerequisites: 212-124 and 212-264.

212-626 Special Topics in the Study of Family Life 1-3 Cr. Family life programs and literature; individual study of problems of personal or professional interest. Prerequisite: 212-350. Repeatable for credit. F-W-S

212-626A Special Topics in the Study of Family Life 1-3 Cr. Family life programs and literature; individual study of problems of personal or professional interest. Prerequisite: 212-350. Repeatable for credit. F-W-S

212-637 Seminar in Child Development 2 Cr. Special problems and aspects in child development; preference given to students' interests. Prerequisite: consent of instructor.

212-638 Child Abuse and Neglect 2 Cr. How child abuse and neglect affects the abused/neglected child and the abusing/neglecting family; ways of coping with family and social problems. Prerequisite:

212-124, 212-250 or consent of instructor. F

212-650 Introduction to Marriage and Family Therapy 3 Cr. Conceptual frameworks and approaches to marriage and family counseling. Prerequisite: consent of instructor. F

212-651 Marriage and Family Therapy Seminar 3 Cr. Application of basic counseling techniques in premarital, marital, family and couples-group counseling; supervised by professional marriage and family counselor. Prerequisite: 212-650 or consent of instructor. W

212-652 Fatherhood 1 Cr. Critical issues surrounding role of the father in today's society. Prerequisite: 212-124 or 212-250.

212-653 Relationship Communication Training 2 Cr. Communication theories and skills applied to marital, family and other intimate relationships. Application of communication skills to personal relationships and professional work.(Preferably, but not necessarily, have your premarital or marital partner with you). Prerequisite: consent of instructor. F

212-654 The Workplace and the Family 2 Cr. Linkages between families and workplace; corresponding consequences for individual family well-being and the workplace. Prerequisites: 212-124 and 212-250 or consent of instructor. W

212-660 Current Topics in Sexuality 1 Cr. Overview and evaluation of current research concerning human sexual behavior and attitudes. Prerequisite: 212-250. F-W-S

212-664 Special Topics in Early Childhood Curriculum 1-3 Cr. Philosophy and methodology of early childhood educa-

tion: problems confronting teachers. Prerequisite: 212-303. Repeatable for credit. S

212-665 Administration--Early Childhood Education Programs 2 Cr. A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required. Prerequisite: 212-408B. F-S

212-666 Family Planning 1 Cr. Factors influencing family planning; knowledge and services for effective family planning practice. Prerequisite: one undergraduate course in family relations.

212-680 The Aging Person 2 Cr. Characteristics and needs of aged members of society; intergenerational relationships of family members. F-W

212-685 Seminar--The Culturally Distinct Child and Family 3 Cr. Study of ethnic, racial, cultural and economic influences on the child and family in the United States. Emphasis on improving human interactions. Prerequisite: 212-324 or 212-350. F-W

212-690 Death Education and Counseling in Families 2 Cr. Death and dying theory; research, practice and application in education and individual and family counseling. Prerequisite: 212-351 or consent of instructor.

212-693 Practicum in Child Development and Family Life 4-8 Cr. Practicum experiences in child development, family relationships and human resource management within a community agency, business or organization. Prerequisite: consent of instructor. F-W-S

212-703 Seminar in Child Development 2 Cr. Advanced seminar in study of all aspects of child development.

212-707 Issues and Problems in Parent Education 2 Cr. A study of the issues and problems of parent groups and the training of parent-group leaders. Prerequisite: 212-407 or consent of instructor.

212-728 Family Life Issues 2 Cr. A study of current issues and problems in marriage and the family. An investigation of research, literature and consideration of theoretical interpretations in today's world. An exploration of how familial experiences affect behavioral patterns and attitudes of children, adults and self.

212-740 Special Problems in Family Life Education 2 Cr. Planning and implementation of community programs in family life education.

212-742 Human Development 2 Cr. Human development theory, research, changing trends, problems and interpretations will be explored. Emphasis on application of scientific knowledge to practical relationships with children in the family, school, and community and implications of child development concepts towards understanding of self and others.

212-750 Systems of Marital and Family Therapy 3 Cr. Survey of conceptual frameworks and approaches to marital and family therapy from a systems point of view. Prerequisite: 212-650 or consent of instructor. F

212-751 Seminar in Marriage and Family Therapy 3 Cr. Advanced and in-depth study of the issues, skills and methods in premarital intervention and marriage and family therapy. Prerequisite: 212-750 or consent of instructor. W

212-755 Professional Issues in Marriage and Family Therapy 3 Cr. Exploration of the issues in the development of professional skills, attitudes and identity in the area of marriage and family therapy. Prerequisites: 212-750, 212-751 or consent of instructor.

212-760 Sex Therapy Seminar 2 Cr. This course is offered to graduate students, who have already taken basic course in human sexuality and who plan to work in the helping professions. Its main goal is to provide participants with the basic skills, knowledge, and attitudes that will enable them to help clients solve problems related to sexuality. Prerequisite: 212-660 or course deemed equivalent by instructor. W

212-766 Problems in Early Childhood Education 3 Cr. Overview of issues in early childhood education with emphasis on problems confronting teachers in establishing early childhood programs in communities and schools.

212-793 Marriage and Family Therapy Practicum I 4 Cr. Preparation for professional marriage and family counseling services through seminar discussions, observation, and supervised counseling experience. Prerequisite: personal screening and approval by instructor or admission without deficiency to the proposed program in Marriage and Family Therapy; concurrent registration in 413-793; commitment to second semester sequel--enrollment in 413-794 and 212-794. F

212-794 Marriage and Family Therapy Practicum II 4 Cr. Sequel to 212-793. Continuing preparation for professional marriage and family counseling services through seminar discussions, observation, and supervised counseling. Prerequisite: successful completion of 212-793 and 413-793; concurrent registration in 413-794.

212-795 Marriage and Family Counseling Practicum 1-2 Cr. The study and application of family theory in a clinical setting. Prerequisite: acceptance into the M.S. degree program in Marriage and Family Therapy or permission of the program director.

214-515 Clothing for Special Needs 2 Cr. Methods by which the disabled, handicapped, elderly, and other people with special needs may have their clothing needs met. F-W

214-519 Textile and Clothing Economics 2 Cr. Economic importance of textile and apparel industries in the U.S. and internationally. Special course fee. Prerequisites: 214-140 and 320-210. F-W

214-525 Men's and Boys' Merchandising 1 Cr. Specialized techniques of merchandising men's wear and boys' wear: stock planning, market trends and controls. Prerequisite: 214-327. F-W

214-527 Store Management 3 Cr. Develop management skills for retail stores of varying size. Prerequisites: 214-430 or consent of instructor, senior or graduate standing. F-W

214-529 Fashion Merchandising Internship 8 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. F-W-S

214-529A Fashion Merchandising Internship 6 Cr. Work in prearranged job (advanced position similar to trainee job) provides special opportunity in fashion retailing. Prerequisites: 214-298, 90 credits completed, 3.0 GPA, and Fashion Merchandising major. S

214-535 Special Topics in Fashion Merchandising 1-2 Cr. Special topics in fashion merchandising. Repeatable for different topics. Prerequisites: junior standing, completion of basic courses within the area or consent of instructor. Repeatable for credit.

214-541 Fabric Maintenance 2 Cr. Products and methods used in cleaning textile products; compare home and commercial laundry methods and dry cleaning procedures and their effects on textile products. Prerequisite: 214-140. F

214-545 Textiles for Interiors 2 Cr. Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses. F

214-550 Textile Evaluation 3 Cr. Problems in fiber identification, fabric performance, and care; chemical and microscopic testing procedures; methods for gathering and interpreting data; individual problems. Prerequisite: 214-140. F-W

214-555 Special Topics in Textiles and Clothing 1-2 Cr. Special topics in clothing and textiles. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-568 Engineered Tailoring 2 Cr. Industrial production methods applied to construction of tailored garments. Prerequisites: 214-266, 214-272. F

214-581 Functional Clothing Design 3 Cr. Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human body, structural properties of materials, and apparel forms. Prerequisites: 214-368, 214-550, 214-580. F

214-590 Practicum in Textile Design 3 Cr. Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique, and hooking; emphasis on good design and creativity. Prerequisite: 304-101. F-W

214-591 Natural Dyeing and Hand Spinning 2 Cr. Gather dyes from local environment, select mordants, dye fibers; spin dyed fibers on spinning wheels/drop spindles; historic dimensions. S

214-593 Design Problems in Textile Printing 3 Cr. Advanced textile printing practicum with specific concern for design problems. Special course fee. Prerequisite: 214-492 or consent of instructor.

214-595 Special Topics in Textile Design 1-2 Cr. Special topics in textile design. Repeatable for different topics. Prerequisite: junior standing. Repeatable for credit.

214-605. International Study Tour to the Fashion Industries 3-6 Cr. Tour of international centers of clothing, textiles, and related arts. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. S

214-610 History of Costume--Ancient to European 3 Cr. Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume. F

214-611 History of American Costume 3 Cr. Evolution of American costume from colonial times to present; costume characteristics and social, political, religious and cultural influences. W

214-617 Social/Psychological Aspects of Clothing 3 Cr. Social and psychological

influence of dress on individual and group behavior patterns. F-W

214-625 Mass Merchandising 3 Cr. History, planning, design and techniques of mass merchandising in shopping centers, discount stores, and franchised and leased operations. Prerequisite: 214-227. F-W

214-639 National Study Tour to Fashion Industry 1 Cr. Five-day visit to New York or alternate city; study hours, discussions and lectures by leaders in American fashion market. Prerequisites: consent of instructor and junior, senior or graduate standing. W

214-645 United States Textile Study Tour 2 Cr. Tour of textile industries in the U.S.; professional visits, lectures and discussions by consultants in textile field. Prerequisite: graduate standing or upper division. S

214-650 Textile Science 3 Cr. Structural aspects of textile fibers, yarns, and fabrics; modification of fibers; fiber and fabric analysis. Prerequisite: 214-140. F

214-655 Recent Developments in Clothing and Textiles 2 Cr. Apparel and textiles explored in light of new developments in these and related fields. Prerequisites: 214-140, 214-266 or consent of instructor.

214-666 Tailoring 3 Cr. Construction of suits and coats using custom tailoring techniques. Prerequisite: 214-266. W

214-670 Theatrical Costuming 3 Cr. Problems in costuming theatrical productions; plan, design and construct costumes for major theater production, as coordinated by director of production. Prerequisite: 214-266 or consent of instructor.

214-680 Draping 3 Cr. Application of draping principles in design and construction of garments; emphasis on creativity. Prerequisite: 214-266. F-W

214-681 Apparel Design--Draping 1 Cr. Advanced techniques of draping in apparel design; emphasis on individuality and fabrics of interesting texture and design. Prerequisite: 214-680.

214-682 Apparel Design--Flat Pattern 1 Cr. Interpretation of original designs using pattern drafting and advanced flat pattern methods. Prerequisite: 214-580.

214-685 Apparel Design Studio 2 Cr. Analysis of designer responsibilities. Creation and development of original designs using flat pattern and/or draping techniques. Preparation of a professional portfolio. Prerequisites: 214-581, 214-680, 304-534. W

214-690 Advanced Textile Design--Stitchery 1 Cr. Creative exploration of textile design: stitchery and applique. Prerequisite: 214-590. W-SO

214-691 Advanced Textile Design--Non-Loom 1 Cr. Creative potentials of specific areas in textile design: non-loom interlacing thread techniques (sprang, macrame, netting, knitting, crocheting). Prerequisite: 214-590. W-SE

214-692 Advanced Textile Design--Hooking 1 Cr. Creative potentials of specific areas in textile design: hooking and rya. Prerequisite: 214-590. W

214-693 Structural Design and Weaving 2 Cr. Experiences in loom weaving including two and four harness techniques. Special course fee. Prerequisite: 304-101 or consent of instructor. F-W-S

214-694 Advanced Weaving Studio 2 Cr. Complex hand-weaving techniques: block theory, pile constructions, leno techniques and double cloth. Individual work encouraged. Special course fee. Prerequisite: 214-693, or equivalent. F-W-S

214-695 Historic and Contemporary Fabrics 3 Cr. Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience. W

214-730 Seminar in Fashion Merchandising 2 Cr. Investigation, evaluation, and interpretation of current literature and research in Fashion Merchandising. Prerequisite: graduate standing or consent of the instructor. F-W

214-740 Seminar in Textiles 2 Cr. Investigations and new developments in the textile field. Opportunity for individual problems. Prerequisite: 214-650 or consent of instructor.

214-755 Topics in Clothing and Textiles 1-2 Cr. In depth investigation of a specific area of clothing or textiles. A current topic that lends itself to a lecture discussion method of instruction will be selected for study. Prerequisite: consent of instructor.

214-760 Seminar in Clothing 2 Cr. Review, evaluation and interpretation of current research in clothing and in its interrelationships with other disciplines. Prerequisite: consent of instructor or teaching experience.

214-765 Workshop in Clothing and Textiles 1-2 Cr. Opportunity for cooperative work in some aspect of clothing study. Prerequisite: teaching experience.

214-768 Problems in Clothing and Textiles and Designs 2 Cr. Identification, selection and completion of a problem in clothing and textiles culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

214-769 Design Option Thesis 6 Cr. Independent research under direction of investigation advisor. Culminating in a design show. A descriptive paper written according to thesis standards, including slides, will be presented. Prerequisites: 421-740 and approval of major director. F-W-S

214-770 Thesis--Clothing and Textiles 6 Cr. Independent research under direction of investigation adviser. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Prerequisites: 421-740, approval of major director. F-W-S

214-780 Advanced Draping 1 Cr. Manipulation of various fabrics on a dress form to develop garments from given and self designed sketches that reflect advanced techniques. Construct garments from patterns. Prerequisite: 214-680.

214-781 Advanced Flat Pattern 2 Cr. Draft and develop paper patterns for garments by varying a master pattern from given and self designed sketches that reflect advanced techniques. Construct garments from pattern. Prerequisites: 214-280, consent of instructor.

214-790 Seminar in Textile Art 2 Cr. Textile art from historic and contemporary perspectives. Issues and trends in textile design. Prerequisite: consent of instructor or minimum of six credits in textile art area.

214-792 Advanced Practicum in Textile Printing 3 Cr. Independent exploration of selected textile printing techniques emphasizing design, process, production and costing. Special course fee. Prerequisite: 214-592.

229-505 Nutrition for the Aged 2 Cr. Nutrient requirements and food consumption patterns of the elderly; food services for aging Americans. Prerequisite: 229-212 or consent of instructor. W

229-512 Clinical Experience in Elderly Nutrition Programs 1 Cr. Practical experience in basic foodservice operation and nutrition education activities in an elderly nutrition program. Prerequisites: 229-410 and 229-505, 229-606 recommended. F-W-S

229-525 Special Topics in Food and Nutrition 1-2 Cr. Study of special topics in Food and Nutrition. Prerequisites: consent of instructor and for 500 level, completion of basic courses in the area. Repeatable for credit. S

229-550 Fast Food Operations 3 Cr. Organization and function of fast foodservice operations. Work methods procedures, staffing, food quality and quantity control, space and equipment maintenance, safety, sanitation, merchandising and career options will be covered. Prerequisites: 229-124 or 229-240, 229-308 and 245-311. F-W

229-606 Nutrition Education 3 Cr. Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources. Prerequisites: 229-212 and 242-201. F-W

229-612 Clinical Experience--Community Nutrition Programs 1 Cr. Practical experience

with community nutrition program; basic nutrition program or foodservice operation and nutrition education activity. Recommended: 229-618 and 229-630. Prerequisites: 229-308 or 229-318, 229-410, 229-606 and 229-680. F-W

229-618 Diet Therapy 4 Cr. Principles and methods for use of diet as therapy in certain pathological conditions. Prerequisite: 229-410 completed at C level or above. F-W

229-620 Food Styling 1-3 Cr. Food as media for artistic expression; effective use of color, form and texture. Prerequisites: 229-124 or 229-249 and senior or graduate standing or consent of instructor. Repeatable for credit. F-W-SE

229-630 Food Behavior 3 Cr. Food behavior: how it controls eating problems, resultant nutritional status; formation of food patterns to meet physical, physiological, psychological or social needs; modification of food behavior. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 (preferably within past two years). F

229-631 Readings in Food Science and Nutrition 2 Cr. Critical reading, evaluating, and reporting from pertinent current journals and other publications. Repeatable for credit.

229-633 Maternal and Child Nutrition 3 Cr. Application of principles to maternal, infant, child and adolescent nutrition. Prerequisites: 229-212 and 308-132. F-W

229-638 Experimental Foods 3 Cr. Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area. Pre-

requisites: 229-124 or 229-240 and 311-201. F-W

229-642 Advanced Foods 2 Cr. Comparative studies of food selection and preparation; appraisal of foods. Prerequisite: 229-124 or 229-240. F-W

229-650 Food Processing 3 Cr. Industrial methods used to prepare and preserve food. Prerequisites: 229-124 or 229-240, 355-120. W

229-661 Social and Cultural Aspects of Food 2 Cr. Social, economic, and cultural influence on human food patterns. Prerequisites: 229-124 or 229-240 and senior or graduate standing or consent of instructor. F-W-SO

229-665 International Food Study Tour 3-6 Cr. Specific international setting tour to study culture, food patterns and industry. Repeatable for credit. SE

229-680 Community Nutrition 3 Cr. Current status and legislative regulation of community nutrition programs; assessment of community needs and resources; program planning, funding and evaluation; role of community nutritionist/home economist as program planner. Recommended: courses in social and behavioral sciences. Prerequisite: senior or graduate standing and 229-212 or equivalent (preferably within last two years). W

229-701 Trends in Nutrition 1-2 Cr. Practical application of recent developments in the field of nutrition. Prerequisite: 229-212. Repeatable for credit.

229-702 Minerals and Vitamins 3 Cr. Absorption and intermediary metabolism of minerals and vitamins. Prerequisite: 299-410.

229-705 Geriatric Nutrition 2 Cr. Theory and relationships of nutrition, longevity, and aging. Food and nutrition legislation for the elderly--theory and implementation. Nutritional implications of acute and chronic disease states common among the elderly.

229-706 Instructional Techniques in Food Systems 2 Cr. Training techniques for teaching courses related to commercial food and food service. Prerequisite: graduate standing.

229-708 Food Seminar 2 Cr. Discussion and interpretation of recent developments in food preparation, food processing and food products. Choice of problems based on the needs and interests of the students. Repeatable for credit.

229-710 Clinical Nutrition 3 Cr. Innovative approaches in nutrition therapy. Clinical experience offered in area hospitals. Prerequisite: 229-618, or equivalent.

229-711 Nutrition Seminar 2 Cr. Discussion and interpretation of recent developments in fundamental and applied nutrition. Choice of problems based on needs and interests of students. Repeatable for credit.

229-712 Practicum in Community Nutrition Programs 1-2 Cr. Advanced experience in community nutrition programs. Individual project in nutrition counseling, identification, delivery and evaluation of nutrition and appropriate food services. Prerequisites: 229-606, 229-618, 229-680, 229-630, consent of instructor. Repeatable for credit.

229-715 Menu Analysis and Planning 3 Cr. Principles of planning and designing menus for production and sales in commercial and institutional food services.

Special emphasis is given to computerization of the menu planning process. Prerequisite: 354-141 or 354-741.

229-720 Workshop in Foods 1 Cr. Individual and group investigations and solutions of problems in foods/food service. Prerequisite: graduate standing. Repeatable for credit.

229-721 Workshop in Nutrition 1 Cr. Individual and group investigations and solutions of problems in nutrition science/nutrition education. Prerequisite: graduate standing. Repeatable for credit.

229-725 History of Food 3 Cr. Survey of the geographical, political, social, religious, and economic forces affecting people's diet, food selection, traditions, rituals, habits and service throughout history. Prerequisite: necessary background in history and anthropology as judged by the instructor.

229-729 Proteins 3 Cr. Digestion, absorption, and intermediary metabolism of protein. Prerequisite: 229-410.

229-730 Recent Developments in Food Science 2 Cr. Consideration of current research which gives perspective in food science. Prerequisites: 311-201, 421-761 421-740.

229-736 Carbohydrates and Lipids 3 Cr. Digestion, absorption, and intermediary metabolism of carbohydrates and lipids. Prerequisite: 229-410.

229-740 Food Preservation Technology 3 Cr. Application and evaluation of the technology of food preservation to selected areas in food science. Prerequisites: 311-511 and 308-206.

229-742 Sensory Evaluation of Food 2 Cr. Selection, identification and measure-

ment of food evaluation tools using consumer and laboratory sensory panels.

229-746 Food Innovations 2-3 Cr. Effects of food industry innovations on preparation and service of foods.

229-747 Problems in Food Science and Nutrition 2 Cr. Identification, selection and completion of a problem in food science and nutrition, culminating in a Plan B paper and oral presentation of the paper. Prerequisite: 421-740. F-W-S

229-756 Advanced Experimental Food 3-4 Cr. Principles of research methods applied to directed investigations in food preparation. Prerequisite: 229-638. F-W

229-770 Thesis--Food Science and Nutrition 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, preparation of the final paper according to thesis standards and oral presentation of the research. Student may enroll for variable semester hours of credit in various terms with a final total of 6. Prerequisites: 421-740, approval of major director. F-W-S

242-500 Externship--Home Economics Community Education 4-8 Cr. Practicum in one or more of following home economics education programs: extension services, elementary education, post-secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. Prerequisite: consent of department. F-W

242-503 Home Economics in the Middle and Elementary School 3 Cr. Develop

techniques, materials and curriculum concepts in home economics with application of human growth and development principles for teaching in middle and elementary school. W

242-505 Home Economics Elementary School Practicum 2 Cr. Teaching experience at the elementary school level under the guidance of a cooperating teacher and university supervisor. Prerequisite: 242-503. W

242-544 Future Homemakers of America Workshop 1 Cr. Integration of Future Homemakers of America and the Home Economics Related Occupations student organizations into the home economics classrooms and programs. Prerequisite: junior standing.

242-620 Vocational Programs in Home Economics 2 Cr. Techniques, materials and curriculum for home economics wage-earning programs in secondary and post-secondary schools; preliminary procedures for program development. Prerequisites: 199-502 and 242-301. F-W

242-623 Education for Consumer Home-making 2 Cr. Curriculum development; evaluation of methods and materials for teaching consumer education at secondary level. Prerequisite: 242-301. S

242-630 Concepts of Extension Education 2 Cr. Concepts and processes in conducting educational programs for adults and youth: philosophy, objectives and organization of extension education; leadership, development, program development, teaching methods and evaluation. Prerequisite: senior or graduate standing in home economics or home economics education. W

242-651 Family Life Education Programs 2 Cr. Development of family life educa-

tion programs including methods, materials and techniques for teaching family relationships and child development at the secondary level. Prerequisites: senior standing, consent of instructor. F-W

242-708 Curriculum Studies in Home Economics 2 Cr. Principles of curriculum construction. Review of recent literature on curriculum development. Evaluation of curriculum practice and techniques. F-SO

242-710 Applied Evaluation in Home Economics 2 Cr. Theory and application of principles in planning evaluation techniques in home economics to assess behavioral changes in the cognitive, affective, and psychomotor domains. Prerequisite: graduate standing. W-SE

242-712 Home Economics for the Junior High School 3 Cr. Principles of curriculum development for the home economics program in the junior high school. Emphasis on recent research, philosophy and emerging practices in program patterns.

242-720 Special Topics in Home Economics Education 1-2 Cr. Consideration of problems in contemporary living that are affecting home economics education and their influence on the teaching of home-making. Repeatable for credit. S

242-728 Organization and Administration of Home Economics 2-3 Cr. Opportunity for advanced students to work on solution of actual field problems dealing with organization and administration of home economics in various types of schools. Prerequisite: graduate standing. S

242-744 Seminar in Home Economics Education 1-2 Cr. Issues in home economics education. Repeatable for credit. F-W-S

242-752 Child Development Programs in Secondary Schools 2-3 Cr. Planning child development curriculum and laboratory experience for the secondary school. Prerequisites: 212-124, 212-264. S

242-770 Thesis--Home Economics Education 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Prerequisites: 421-740, approval of major director. F-W-S

242-775 Problems in Home Economics Education 2 Cr. Identification, selection and completion of a problem in home economics education, culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

245-501 Foodservice Administration 3 Cr. Organization and administration of institutional foodservice systems, personnel selection and training, cost control and problems of supervision. Prerequisite: 229-318. F-W

245-513 Quantity Food Production and Service 3 Cr. Application of food preparation principles to large-quantity production; menu and formula standardization, food production costs and menu planning for institutions. Prerequisite: 245-312 or 245-501. F-W-S

245-515 Lodging Administration 3 Cr. Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-

efficient organization. Prerequisites: 245-201 and 245-202. F-S

245-521 Foodservice Equipment 2 Cr. Factors affecting design, selection, physical facilities and utilities involved in foodservice equipment. Prerequisite: 130-110. F-W-S

245-531 Ecology of Habitat 2 Cr. Philosophical and physical aspects of human housing, with international perspective; insight into family housing needs through lab work; role of home economist in solution of world housing problems. Prerequisite: six credits of housing, equipment or equivalent. F

245-565 Consumer Aspects of Life Insurance 1 Cr. Comparative methods of determining life insurance needs; evaluation of adequacy of policy and program features; relevance to family financial planning. Prerequisite: 245-275 or consent of instructor. F

245-566 Consumer Aspects of Health Insurance 1 Cr. Types and sources of health insurance available to U.S. consumer; analysis of American health-care crisis and proposed solutions. Prerequisite: 245-275 or consent of instructor. F

245-600 Integrated Management Systems--Hospitality 2 Cr. Exploration, comparison and synthesis of practices, concepts and theories in hospitality management systems. Prerequisite: 245-205. F-W-S

245-625 Hospitality Industry Law and Liability 3 Cr. Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality. Prerequisite: 160-318. F-W

245-626 Hospitality Industry--Employee and Labor Relations 2 Cr. Investigation of employee and labor relations in the hospitality industry; history, legality and techniques of dealing with unionization. F-W

245-640 Psychosocial Dimensions of Tourism 3 Cr. Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourists and residents. W

245-645 Geography of Tourism 3 Cr. Locational analysis of land use and human migration in national and international tourism. Prerequisites: 245-240, 245-340 or consent of instructor. F-W

245-650 Human Habitat 3 Cr. Influence of different socio-economic factors on effective use of family housing resources; adjustment and flexibility of safety, comfort, convenience, physical and financial maintenance based on family cycle. Field trips and individual projects. F

245-655 Major Kitchen Appliances 3 Cr. Detailed structure and performance analysis of ranges, refrigerators, freezers, disposers, dishwashers, microwave ovens and selected kitchen appliances. Prerequisite: 245-355, or equivalent. S

245-656 Microwave Oven 2 Cr. Application of microwave heating principles to food preparation and service. F-W-S

245-658 Experimental Laundry Procedures 2 Cr. Application of current knowledge for effective household fabric laundering; equipment use in laundry process, laundry aids and water composition; experimental lab work.

245-660 Consumer Credit 1 Cr. Types and sources of credit, determination of

credit costs, considerations before using, and regulatory laws. Prerequisite: 245-360 or consent of instructor. S

245-662 Consumer Protection 1 Cr. Major federal and state consumer protection agencies; major business, industry and private organizations set up to aid consumers; avenues of individual and collective consumer redress. Prerequisite: 245-360 or consent of instructor. W

245-663 Consumer Law 1 Cr. Major federal and state consumer protection laws, difficulties in obtaining passage and implementation, and pending federal and state consumer protection legislation. Prerequisite: 245-360 or consent of instructor. F-W

245-670 Hospitality--Financial Analysis/Budget/Forecasting 3 Cr. Application of accounting and financial analysis techniques to managerial decision-making in hospitality industry. Prerequisites: 160-206, 245-370 and 245-371. F-W-S

245-676 Family Finance 2 Cr. Financial decisions and judgments that average individuals and families must make during a lifetime; income and occupation, family expenditures, credit, savings, taxes and estate plans. Prerequisite: 320-201. F-W

245-681 Special Problems in Habitational Resources 2 Cr. Current problems in habitational resources; seminar topic chosen by instructor, individual or group. Repeatable for credit. F-W-S

245-682 Hospitality and the Handicapped Traveler 1 Cr. Provide increased sensitivity to needs of handicapped traveler; problems and possible solutions for hospitality organizations. F-W

245-685 Demonstration Techniques 2 Cr. Application of demonstration principles in planning and presenting all types of home economics demonstrations. F-W

245-700 Management Concepts in Food Administration 1 Cr. Management concepts as they apply to institutional food service operations. W-S

245-701 Food Service Administration Management--Implementation 1 Cr. The implementation of selected management concepts which will make food service administrators more effective in their roles as food service managers. F

245-702 Operational Controls in Food Service Management 1 Cr. A management plan designed to incorporate all necessary controls the institution needs to minimize incurred expenses and maximize work performance associated with production. S

245-703 Seminar in Analysis of Foodservice Management 3 Cr. In-depth study of the management systems used in the hotels, restaurants and institutions. W

245-710 Issues in Hospitality and Tourism 2 Cr. Significant topics, trends and issues in hospitality and tourism are investigated, developed and presented. Prerequisite: admission in hospitality and tourism. F

245-780 Seminar in Hospitality and Tourism 1 Cr. Discussion and interpretation of recent research in hospitality and tourism. Choice of problems based upon the needs and interests of the students. Prerequisite: graduate standing. F-W

245-789 Thesis in Hospitality and Tourism 6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of

outline, review of literature, compilation of bibliography, research methodology, conducting of research, interpretation of findings, and preparation of the final draft according to thesis standards. Student may enroll for variable credits in various semesters with a final total of six. Prerequisites: 421-740 and approval of major director. F-W-S

LIBERAL STUDIES

300-510 Introduction to Women's Studies 2 Cr. An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. F-W

300-511 Topic in Women's Studies 1-3 Cr. Exploring, from interdisciplinary perspective, new information and ideas in a selected area of significance to women's studies. Prerequisite: 300-510 or consent of instructor.

300-575 The Ascent of Man 2 Cr. Exploring the nature and intellectual, philosophical and technical growth of humankind using "The Ascent of Man" TV series as basis for thought and discussion. Prerequisite: junior standing or consent of instructor. W

303-610 The Anthropological Study of Family Systems 3 Cr. Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions. Prerequisite: 303-220 or consent of instructor. W

304-500 Drawing II 1-3 Cr. Continuation of 304-100; exploitation of media for creative and expressive ends. Initial en-

rollment must be for 3 credits. Prerequisite: 304-100. Repeatable for credit. F-W

304-501 Life Drawing I 3 Cr. Drawing the human figure in action or at rest; problems in figure composition. Prerequisites: 304-100 and 304-500. F-W

304-502 Life Drawing II 1-3 Cr. Advanced problems in figure composition and graphic interpretation of the figure. Initial enrollment must be for 3 credits. Prerequisite: 304-501. Repeatable for credit. F-W

304-503 Design 3 Cr. Application of basic design principles using various media for development of visual sensitivity to three-dimensional form. Prerequisite: 304-101. Repeatable for credit. F-W

304-509 Painting I 3 Cr. Introduction to character and use of various painting media; work from still life and life with reference to problems of two-dimensional color composition. Prerequisite: 304-500. F-W-S

304-510 Painting II 1-3 Cr. Advanced work in oil painting; exploitation of medium for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-509. Repeatable for credit. F-W-S

304-511 Sculpture I 3 Cr. Introduction to sculptural concepts. Prerequisite: 304-500, or equivalent. F-W

304-512 Sculpture II 1-3 Cr. Advanced problems in sculpture; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits. Prerequisite: 304-511. Repeatable for credit. F-W

304-513 Ceramics I 3 Cr. Basic design and techniques of ceramic production for

artist/potter; forming, firing and surface treatment. F-W-S

304-514 Ceramics II 1-3 Cr. Use of clay, glazes and kiln for design and production of high-fired ceramics. Initial enrollment must be for 3 credits. Prerequisite: 304-513. Repeatable for credit. F-W-S

304-515 Art Metal I 3 Cr. Design and construction of jewelry and objects in precious and non-precious materials with relationship to human interaction. Prerequisite: 304-101, or equivalent. F-W-S

304-516 Art Metal II 1-3 Cr. Advanced problems in design and construction of jewelry, hollow forms and objects in precious and non-precious materials. Initial enrollment must be for 3 credits. Prerequisite: 304-515. Repeatable for credit. F-W-S

304-517 Printmaking I 3 Cr. Introduction to the concepts and techniques of printmaking. Prerequisites: 304-100 and 304-101. F-W-S

304-518 Printmaking II 1-3 Cr. Advanced work in the processes of relief, silkscreen, etching, or lithographic printmaking. Initial enrollment must be for 3 credits. Prerequisites: 304-500 and 304-517. Repeatable for credit. W-S

304-519 Current Art Ideas and Practices 3 Cr. Seminar/lab in ongoing contemporary art issues, ideas and directions. Prerequisite: junior standing in art or completion of two advanced studio courses.

304-520 Clay and Glaze Laboratory 1 Cr. Procedures and processes in testing of clays; formulation of clay bodies and development of clay slips and ceramic glazes for artist/potter. Prerequisite: 304-513 or 304-514 or consent of instructor.

304-522 Modern Art 3 Cr. The main currents and developments in art from Monet and Cezanne to 1950. F

304-525 Egyptian and Mesopotamian Art 3 Cr. The evolution of the arts of ancient Egypt and the Near East.

304-526 Greek and Roman Art 3 Cr. The arts of ancient Greece and Rome.

304-527 Medieval Art 3 Cr. The arts of Europe and Byzantium from late Roman Empire to end of Middle Ages.

304-528 Italian Renaissance Art 3 Cr. Architecture, sculpture, and painting of the Italian Renaissance from 14th to 17th century.

304-529 Northern Renaissance Art 3 Cr. Renaissance art in Northern Europe from 15th to 17th century.

304-530 Northern Baroque Art 3 Cr. Architecture, painting, sculpture and other art forms of 17th century Northern Europe.

304-531 Southern Baroque Art 3 Cr. Development of art in Southern Europe from Italian Renaissance to 18th century.

304-532 Economics of House Furnishing 3 Cr. Study of consumer house furnishing problems based on utilitarian, economic, aesthetic and social values of household commodities. Quantity and quality budgets at different price levels. Visits to house furnishing markets. F

304-533 Period Furnishings 3 Cr. A survey of furniture and furnishings in the western world. F

304-534 Fashion Illustration 3 Cr. Problems in graphic techniques, fashion illustration, contemporary fashion design and advertising presentation. Prerequisite: 304-101. Repeatable for credit. F-W

304-545 Senior Seminar 1 Cr. Professional practice including portfolio and senior exhibition; current ideas and career opportunities within the art profession. Prerequisite: Senior standing in program. S

304-556 Advanced Art Workshop 1-3 Cr. Selected art concepts, processes and media will vary to serve special student populations. For students familiar with workshop approach or advanced in art program. Credit determined by individual contract. Prerequisite: consent of instructor.

304-602 American Art 3 Cr. Development of visual arts in the U.S. from colonial period to 1950.

304-603 19th Century Art in Europe 3 Cr. History of European art from about 1800 to 1900.

304-604 Art Since 1950 3 Cr. Developments in painting and sculpture in Europe and America since 1950.

304-606 Oriental Art 3 Cr. Art from prehistoric times to 19th century in China, Japan and their spheres of influence.

304-607 Aesthetics 3 Cr. Examination of the philosophers of contending theories in art. Prerequisite: 304-522. F-W

308-506 Food Microbiology 3 Cr. Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific

groups of economically important microorganisms. Prerequisite: 308-306. F-W

308-650 Neuroanatomy 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. F

308-651 Psychobiology 2 Cr. Phylogenetic adaptations of human behavior using comparative model; sensory, central and motor behavior of animals as they relate to human behavior. W

311-501 Physical Chemistry Lecture 3 Cr. Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with 311-503. Recommended: 311-531. Prerequisites: 311-115 or 311-125 or 311-135 and 355-156. F-W

311-511 Biochemistry 4 Cr. Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work in polarimetry, colorimetry, chromatography and quantitative analytical procedures (Kjeldahl determination of protein nitrogen). Special course fee. Prerequisites: 308-132 and 311-201. F-W

311-515 Food Chemistry 3 Cr. Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (Maillard-Browning reaction), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods. Special course fee. Prerequisites: 311-115 or 311-125 or 311-135, 311-201 and 311-203. W

311-521 Textile Chemistry 3 Cr. Chemical and physical properties of monomers and high polymers of following natural and synthetic fibers: cotton, cellulose derivatives, silk, wool, linen, nylon, polyesters, acrylics, olefins and polyurethanes. Lab analysis of textile fibers, textile fiber mixtures and dyestuffs. Physical properties of textiles, synthesis of textile polymers, crease resistance; textile finishing. Special course fee. Prerequisite: 311-115.

311-531 Quantitative Analysis 3 Cr. Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques. Special course fee. Prerequisite: 311-115 or 311-135. W

311-535 Instrumental Methods of Analysis 3 Cr. Application of instrumental methods to chemical analysis: electrochemical, spectral; applications of common instrumental methods. Techniques for obtaining reliable results by instrumental means. Recommended: 311-531. Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. F

311-541 Chemistry of Materials 3 Cr. Practical applications of principles and facts of chemistry to technological problems: structure and properties of common materials; fuels (solid, liquid, gaseous, fossil, nuclear) and air pollution; water (domestic, industrial, sewage) and water pollution; electrical properties (cells, batteries, fuel cells, electrolysis) and corrosion of metals; protective coatings (paints, varnishes, enamels, lacquers, plating, anodizing, cladding). Special course fee. Prerequisite: 311-115 or 311-125 or 311-135. F-W

311-542 Industrial Hygiene 3 Cr. Principles and techniques for recognizing, evaluating, and controlling existing or poten-

tial occupational health hazards that affect employee safety and health.

311-553 Environmental Chemistry 3 Cr. Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution and/or are of current importance; chemical technology needed to correct imbalance. Special course fee. Prerequisite: 311-115 or high school chemistry and consent of instructor. F-W

311-612 Advanced Biochemistry 3 Cr. Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids. Prerequisites: 311-201, 311-203 and 311-511. F-W

320-550 Managerial Economics 3 Cr. Decision-making, demand and cost analysis, competitive and non-competitive price systems, marketing problems, capital budgeting and criteria for investment decisions. Prerequisite: 320-215. F-W

320-610 Contemporary American Economic Problems 3 Cr. Survey of domestic economic problems at advanced level with special emphasis on applications and effects on industry. Prerequisites: graduate standing and three credits in Economics.

320-680 International Trade 3 Cr. Theory and practice of capital movements; foreign exchange rates and controls; balance of payments; tariffs. F-W

320-720 Labor and Industrial Relations 2 Cr. Human relations in industry from the viewpoint of labor, management and the government. W-S

326-500 Literature for the Reading Child and Adolescent 3 Cr. Critical survey of

literature for children (age 8 to beginning to read adult literature); adolescent literature and media presentations of literature. Prerequisite: 326-102 or 326-112. W

326-515 Technical Writing for Home Economics 3 Cr. Specialized writing done by home economists in business; experience in preparing reports, letters and other appropriate materials. Prerequisites: 326-102 or 326-112 and junior standing. F-W-S

326-516 Technical Writing for Industry 3 Cr. Type of writing current in industry; writing business reports and other materials. Prerequisites: 326-102 or 326-112 and junior standing. F-W

326-518 Mass Communication in American Society 3 Cr. History, social implications and future of mass media of communications. Prerequisite: 326-102 or 326-112. F

326-525 Writing Technical Articles 3 Cr. Experience in writing technical articles; requirements for publication in professional media. Research, write and submit individual projects of suitable length and maturity connected with area of specialization. Prerequisites: 326-515 and 326-516 or consent of instructor.

326-541 Psycholinguistics 3 Cr. Linguistics behavior and psychological processes responsible for it. Prerequisite: 326-102 or 326-112. W

326-546 Research Reporting 3 Cr. Effective organization and presentation of individual research. Prerequisites: 326-102, 326-112. F

326-601 Juvenile Fiction Seminar 1-3 Cr. Juvenile fiction: works, themes, genres, issues, variable credit. Variable content repeatable. Prerequisites: 326-300 or 326-

500, senior standing or consent of instructor.

354-530 Statistical Methods 3 Cr. Histograms, mean and standard deviation, combinatorics, probability; binomial, hypergeometric, normal, chi-square, T and F distributions and their uses; statistical inference; contingency tables, linear models, analysis of variance with appropriate applications. Prerequisites: 355-120, or equivalent and three years of high school math. F-W-S

354-531 Design of Experiments I 2 Cr. Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. Prerequisite: 354-332 or consent of instructor. F

354-532 Design of Experiments II 2 Cr. Fixed-effect, random-effect and mixed models; nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of covariance, response surfaces, sequential analysis. Prerequisite: 354-531. W

354-535 Applied Stochastic Processes I 2 Cr. Stochastic processes, Markov chains, stationary distributions, construction of Markov processes, Poisson and birth and death processes, review of statistical inference as applied to these processes. Prerequisites: 354-332 or 354-530 and consent of instructor.

354-536 Applied Stochastic Processes II 2 Cr. Application of topics introduced in 354-535: theory of reliability; branching, social and behavioral, and queueing processes. Prerequisite: 354-535.

354-590 Topics 1-3 Cr. Topics of current importance in applications of mathematics to problems in business, industry,

government or society. May be repeated for additional credit with consent of program director. S

354-640 Computer Use in Education 3 Cr. Computer use in administrative, research and instructional aspects of education. S

354-741 Computer Programming Techniques 2 Cr. Introduction to computer systems and their utilization. Emphasis on translating language with application to individual research projects, statistical or developmental. Not open to students who have completed 354-141. Prerequisite: graduate standing. F-W-S

365-510 Philosophy Seminar 2-4 Cr. Selected topics in philosophy including works of individual philosophers, thematic problems in history of philosophy, issues in contemporary philosophy, or relations of philosophy to contemporary problems in other areas. Prerequisites: consent of instructor and basic course in philosophy, logic or ethics. Repeatable for credit.

372-518 Microprocessors and Applications 3 Cr. Equipment, interfacing and programming for microprocessor systems. Prerequisite: Ten credits in lab-based physics or electronics and two credits in computer programming. F-W

372-519 Advanced Microprocessor Laboratory 3 Cr. Advanced project: design, construction, and troubleshooting of a functioning microprocessor system. Prerequisites: 372-518 and consent of instructor.

372-527 Physical Electronics 3 Cr. Theory and applications of solid state electronics; basic principles of electronic devices. Prerequisites: 355-153, 372-221 and 110-240 or 110-543. W

372-529 Atomic and Nuclear Physics 3 Cr. Elements of atomic and nuclear physics. Prerequisites: 372-223 and 355-153. F

372-531 Statics 3 Cr. Essential elements of statics: simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces, trusses and other structures. Prerequisites: 354-141, 355-153 and 372-221. F

372-533 Dynamics 3 Cr. Essential elements of dynamics: rectilinear, angular and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum. Prerequisite: 372-531. W

372-535 Optics 3 Cr. Optics with emphasis on the wave nature of light: interference diffraction, polarization, and coherence; their applications in holography. Prerequisites: 372-223, one year of calculus. W

372-537 Electricity and Magnetism 3 Cr. Properties of electric and magnetic fields in free space and material media. Prerequisites: 372-221 or 355-154, concurrent registration. F

375-510 Public Policy Analysis 3 Cr. Analysis of origins of public policy and policy-making process. Specific case studies of public policy. Prerequisite: 375-210 or consent of instructor. W

375-550 Politics and Technology 3 Cr. Contemporary and future technological innovations; relationship between political institutions and promotion, regulation and impact of industry and technology in the U.S. and other selected countries. Prerequisite: junior standing or senior standing. F

387-515 Criminology 3 Cr. Sociological analysis of structure and function of criminal law, variables of criminal behavior and operation of criminal justice system. Prerequisite: 387-110. W

387-525 Sociology of Leisure 3 Cr. Institutional approach to effects of leisure on social structure; values reflected in leisure; problems with increase in leisure resources. Prerequisite: 387-110. W

387-530 Sociology of the Community 3 Cr. Community structure, chiefly in U.S.; variability and current trends, research techniques, community development. Prerequisite: 387-110. F-W

387-540 Sociology of Work 3 Cr. Human behavior in various types of employment and occupations; trends in U.S. occupational structure. Prerequisite: 387-110. F-W

387-560 Sociology of Juvenile Delinquency 3 Cr. Definitions of and trends in deviant behavior among youth; research findings; efforts in prevention, control and treatment. Prerequisite: 387-110. F-W

387-575 Sociology of Minority Groups 3 Cr. Social/psychological aspects of interaction between majority and minority groups; trends among minorities in U.S. Prerequisite: 387-110. W

387-710 Sociological Foundations for Guidance 3 Cr. A sociological perspective will be briefly introduced (or, re-introduced), applied to an examination of certain problems of modern society relevant to the practice of the guidance counselor, and finally, directed to an analysis of the social role of the guidance counselor. S

391-500 Creative Drama For Children 2 Cr. Theory and techniques of developing original dramatizations for children.

391-508 Speech Skills for Business and Industry 2 Cr. Technical speaking; projects in application of speech skills and activities in business and industry. Prerequisites: 391-100 and junior standing. F-W-S

391-512 Speech Skills for Educators 2 Cr. Application of leadership techniques and speech skills in classroom and educational activities; two-way communication as aspect of classroom climate. Prerequisites: 391-100 and junior standing. F-W-S

391-514 Interviewing 1 Cr. Principles and techniques for interviewee in employment interviews. Prerequisite: 391-100. F-W

391-554 Television Programming and Performance 3 Cr. Planning, writing and performing instructional, public service, special feature or dramatic television programs. Prerequisites: 391-100 and junior standing or consent of instructor. F-W

EDUCATION

413-501 Introduction to Guidance 2 Cr. Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors. F-W-S

413-510 Early Childhood Assessment 3 Cr. Theory and techniques of assessing child development (birth through 8

years) in cognitive, psychomotor and socioemotional areas.

413-571 The Psychology of Marriage and the Family 2 Cr. A study of the interpersonal relations involved in dating, mating, and family collaboration with growing awareness of patterns for self-integration. F-W

413-600 Workshop--Counseling/Psychological Services 1-3 Cr. Current specialized topics studied through experiential activities. Prerequisite: consent of instructor. Repeatable for credit.

413-629 Guidance in the Elementary School 2 Cr. Nature and conditions of guidance in elementary schools; curricular and non-curricular guidance techniques, referrals, parent counseling; guidance principles and practices applied to elementary school child. F-S

413-647 Behavior Problems of Children 2 Cr. Psychological, social and environmental factors contributing to developing child's behavior; cause and treatment of behavioral disorders in children 3 through 12; methods of observing, diagnosing, documenting and interpreting; underlying behavioral dynamics of problem children. Prerequisite: consent of instructor. W-S

413-648 Learning Disabilities in Young Children 2 Cr. Early recognition through observation and use of screening instruments; general and specific developmental delays in the young child; programming to maximize readiness for academic learning. W-S

413-650 Behavior Problems of Adolescents 2 Cr. Behavior problems of contemporary American adolescents; identification, etiology, intervention and prevention; guidance techniques and

processes for teachers, counselors, school psychologists, social service and child care workers, and parents. W-S

413-666 Alcoholism and Family Systems Intervention 2 Cr. The role of alcoholism in the family and how to intervene therapeutically. F-S

413-675 Counseling Theory 2 Cr. Theoretical approaches to counseling: psychoanalytic adaptations, behaviorism, trait-factor, client-centered and others; nature of man, underlying personality theory, goals of counseling, role of counselor and illustrative practical applications in each approach; develop beginning personal theory of counseling. Prerequisite: 413-501. F-W-S

413-694 Counseling Older Persons 2-3 Cr. Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences. S

413-700 Seminar in Counseling and Psychological Services 1-3 Cr. Special topics on current developments in the field. Each seminar is devoted to a specific development to be indicated with a sub-title and description. Prerequisite: consent of instructor. Repeatable for credit.

413-705 Play Therapy 2 Cr. A survey and study of play therapeutic techniques. Observation and supervised experiences. Prerequisites: 479-730, 479-760. F-W-S

413-715 Orientation to Mental Health Counseling 1 Cr. Orientation to Wisconsin mental health system, chapter 51.42, and to the role and function of mental health counselors. Counseling services for mentally ill, alcohol and drug abusers, and developmentally disabled will be discussed. F

413-721 Alcohol and Drug Abuse Treatment Programs 3 Cr. Psychological factors in alcohol and drug abuse. Treatment programs and approaches used by alcohol and drug abuse counselors. Prerequisites: 110-574, concurrent registration or consent of instructor. W

413-731 Problems in Counseling and Psychological Services 2 Cr. Plan B investigations are the primary purpose of this course. Students who are ready to write their Plan B paper should register for this course and then confer with the major advisor to select a staff member who will serve as an investigation advisor. Meetings with the advisor are by arrangement only. Prerequisite: consent of instructor or twelve hours of graduate credit in an appropriate program sequence, including 421-740. F-W-S

413-733 Career Development Process and Issues 2 Cr. Career development concepts, theories, and related social issues that affect people's career choices. W-S

413-733A Career Information Laboratory 1 Cr. Laboratory experience with print and nonprint occupational, educational and personal information; assessment instruments; and instrument and program evaluation techniques. Prerequisite: 413-733 or concurrent registration. W-S

413-744 Psychometric Aids to Marriage and Family Therapy 2 Cr. Instruction and practice in the administration and interpretation of tests appropriate for this area. Practice in treatment application of test results. Prerequisite: 489-753. F

413-750 Appraising the Individual 2 Cr. The case study approach to synthesis of test and non-test appraisal data. Prerequisite: 413-501.

413-752 Group Dynamics 2 Cr. A study of group approaches for providing guidance services to pupils. Designed to help counselors and teacher-counselors understand how groups may be used as a setting for guidance and counseling. Prerequisites: 413-501, 413-675. F-W-S

413-760 Theories and Techniques of Behavior Modification 2 Cr. Theoretical and empirical bases for utilizing behavior modification procedures in schools, clinics and other institutions. Emphasizes role of behavioral consultant. Prerequisite: 479-530 or 479-730, or equivalent. F-W-S

413-765 Organization and Administration of Guidance 3 Cr. Organizational and administrative techniques for providing effective school guidance services in k-post secondary programs. Prerequisite: 413-675. W-S

413-770 Thesis 2-6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of 6. Prerequisites: 421-740, approval of major director. Repeatable for credit. F-W-S

413-775 Alcohol and Drug Abuse Counseling Practicum I 8 Cr. Counseling under supervision in an alcohol and drug abuse treatment facility. Laboratory instruction on various aspects of alcohol and drug abuse treatment approaches. Prerequisites: 413-788, 413-721 and admission to alcohol and drug abuse counseling concentration. F

413-776 Alcohol and Drug Abuse Counseling Practicum II 8 Cr. A continuation of alcohol and drug abuse counseling practicum I. Students will continue a supervised counseling experience in an appropriate treatment facility and related laboratory instruction. Prerequisite: 413-775. W

413-785 Seminar in Hypnosis 2 Cr. Historical and present trends, myths/misconceptions, experimentation, research and counseling/therapeutic uses and misuses of hypnosis and related techniques. Prerequisites: consent of instructor and advanced graduate standing.

413-787 Career Placement Services 1-3 Cr. Development of a community/school-based placement system for schools, post-secondary schools, and/or agencies. May be taken for 1-3 credits and may be repeated once with consent of instructor, if taken for less than 3 credits. W-S

413-788 Counseling Process Laboratory 2 Cr. Basic attending and influencing skills used in the one-to-one and one-to-group situations involving laboratory experiences, such as counseling, feedback, critiquing, modeling, assessing and evaluating. F-W-S

413-790 Supervised Counseling Practicum 2-4 Cr. A minimum of 120 hours of closely supervised counseling experience through a series of interviews with selected counselees. Prerequisite: consent of instructor. F-W-S

413-791 Internship in Guidance and Counseling 8 Cr. The student will devote a minimum of 360 clock hours, full-time (each quarter) in a local school serving as a school counselor. In this experience, he will be supervised by university personnel and work with a fully certified local

school counselor. Experiences include all aspects of the guidance function. Repeatable for credit. F-W

413-793 Marriage and Family Therapy Practicum 4 Cr. Preparation for professional marriage and family counseling services through seminar discussions, observation, and supervised counseling experience. Prerequisites: 212-793, concurrent registration, personal screening and approval by instructor or admission without deficiency to the proposed program in Marriage & Family Therapy; commitment to the 2nd semester sequel; enrollment in 413-794 and 212-794. F-W

413-794 Marriage and Family Therapy Practicum 4 Cr. Sequel to 413-793. Continuing preparation for professional marriage and family counseling services through seminar discussions, observation, and supervised counseling. Prerequisites: 212-793 and 413-793, 212-794, concurrent registration. F-W

413-795 Marriage and Family Therapy Practicum 1-2 Cr. The study and application of family theory in a clinical setting. Prerequisite: acceptance into M.S. Degree program in Marriage & Family Therapy or permission of the program director. S

413-800 Field Study 2-6 Cr. Experience in action type field research in pupil personnel services. The student will identify and research a topic directly related to his career position. Preparation and presentation of a formal report of the study to appropriate personnel. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Repeatable for credit. F-W-S

413-890 Multiple Counseling and Sensitivity Training 2 Cr. A laboratory experience in the analysis and application of

group dynamics and group behavior as related to attitude and behavior change. The origin of conflict, cooperation and misunderstanding within groups. Developing insight and sensitivity towards the student's own attitudes towards other people and their own motivation and value systems in human relations. Prerequisite: advanced graduate standing.

413-892 Advanced Counseling Practicum 2 Cr. Clinical supervised counseling experiences in a variety of school institutional and agency settings. Designed to assist the student to more adequately understand and apply the dynamics of human behavior in the one-to-one counseling relationship. A minimum of sixty to ninety clock hours of experience is required. Prerequisite: 413-790. Repeatable for credit. F-W-S

413-895 Supervision of Counselors and Counseling 2 Cr. Practical applied experiences in the supervision of counseling and counselors; investigation, analysis and application of the psychology of learning and helping as the supervisor assists other personnel services staff in their professional and personal growth and development. Prerequisite: 413-790.

421-522 Secondary Education Seminar 2 Cr. For post-student teaching, discussion of the evaluation, status, and trends of secondary education. The experiences of the students' teaching related to the needs of our democratic society; philosophy, organization, problems, curriculum development, and the responsibilities of the individual teacher.

421-536 Working With the Culturally Different 2 Cr. Intensive study and practical experience in working with the culturally different. Prerequisite: 421-205. F-W

421-590 Mental Health in the Schools 2 Cr. A study of the total school community in terms of factors and dynamics contributing to the development or hindrance of the mental health of students, staff, administration, parents. Prerequisite: junior or senior standing.

421-600 Workshop--Special Topics in Education 1-3 Cr. Current specialized topics studied through experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

421-641 Education Evaluation 2 Cr. Testing, the interpretation of tests by means of simple statistical procedures; methods of evaluating educational programs. W-S

421-682 Reading Methods--Secondary School 2 Cr. Technical information on the reading process, self-concept and reading and specific classroom reading problems. Construction of directed reading activities, informal reading inventories, reading study guides, readability checks, SQ32 study skills, vocabulary development and comprehension materials. Prerequisite: junior or senior standing consent of instructor. F-W-S

421-683 Seminar in Reading Methods for Secondary Schools 1 Cr. Selection, research and presentation for discussion of topics related to reading in secondary schools. Prerequisite: 421-682. W

421-685 Psychology of Adult Education 2 Cr. A global view of the philosophy, purpose and practice in various programs of adult education, and an examination of the characteristics of the adult learner plus a profile of his ego, intelligence, and development.

421-690 Learning Style Theory and Application 2 Cr. An introduction to the educational sciences, including cognitive

mapping. Emphasis is placed on the practical application of the educational sciences in an educational setting. Prerequisite: junior standing.

421-700 Philosophy of Modern Education 2 Cr. A comparative study of the main schools of educational philosophy and of their influence in contemporary education, thought, and practice, points of agreement and of conflict. F-S

421-702 Principles of Supervision 2-3 Cr. Basic principles, types, functions, organizations, and plans of supervision. Interpretation and application of creative supervision plans; individual and class projects concerned with applied methods of supervision in selected educational areas. W-S

421-705 Social Thought of American Educators 2 Cr. The school as a social institution within American democracy. Contributions of the past to education and current philosophies. Historical review, evaluation and consideration of the public school as a social institution. W-S

421-714 Teaching Strategies 4 Cr. Intensive study and practice in mediating the learning process. Focus on the individual teacher and his active role as an instrument which can bring about predictable changes in student cognitive behavior. Minor consideration given to affective and psychomotor behavior. Lecture, discussion and micro-teaching. F-W-S

421-726 Administration 2-3 Cr. Philosophy and principles underlying organization and operation of public education on the local, state, and national levels in the United States. Examinations of prevailing practices and current problems of school management. F-W-S

421-727 Supervision of Student Teachers

2 Cr. Purpose and philosophy of supervision, the role of the cadet center in preparing teachers, relationships and responsibilities of persons involved, orientation, guidance, and evaluation of student teachers. F-W-S

421-733 Survey Procedures 2 Cr. Procedures and organization for conducting surveys. Application of principles by making and writing the report of an actual survey. Prerequisite: 421-740.

421-738 Elementary School Curriculum

2-3 Cr. A study of the social, psychological, cultural, economic, and educational forces operating to bring about changes in the curriculum of the elementary school, k-8. Outstanding state and local curriculum construction programs. Observation and evaluation of the modern elementary school curriculum trends and innovations. Review of curriculum development. S

421-739 High School Curriculum

2 Cr. A study of the social, psychological, cultural, economic and educational forces operating to bring about changes in the curriculum of the secondary school. Outstanding state and local curriculum construction programs. Observation and evaluation of the modern high school curriculum, trends and innovations. Review of curriculum development. S

421-740 Research Foundations 4 Cr. This course serves as an introduction to basic concepts and principles in educational research. The course utilizes mastery grading and elements of individualized instruction. The course functions to help prepare the student for his own graduate research experiences and also to prepare him to be an articulate consumer of research upon completion of the course.

Prerequisite: graduate standing or consent of instructor. F-W-S

421-742 Program Evaluation

3 Cr. Surveys theory and practice of evaluating the effectiveness of a variety of human-service delivering systems, including education. Develops applied competencies in analyzing values and needs of decision makers and articulation and assessment of program objectives (both process and product). Emphasis on building efficient, ongoing evaluation systems. W

421-744 Seminars in Education

1-3 Cr. Special topics on current developments in the field. Each seminar devoted to a specific development to be indicated with a sub-title and description. Repeatable for credit. F-W-S

421-750 Curriculum Theory and Practice

2-3 Cr. A study of curriculum theory and its application. An analysis and development of a rationale, writing educational objectives, identifying a body of knowledge, specifying methodology, and conducting curriculum evaluation. F-W-S

421-765 Problems in Education

2 Cr. Identification, selection and completion of a research problem in education culminating in a Plan B research paper. Prerequisites: 421-740, approval of program director. F-W-S

421-770 Thesis

6 Cr. Independent research under direction of investigation advisor. Selection of problem, review of literature, planning and conducting research, interpretation of findings and preparation of final paper according to thesis standards. Student may enroll for two, four or six semester hours of credit in various terms for a final total of six. Prerequisites: 421-740, approval of program director. F-W-S

421-784 Classroom Discipline 2 Cr. Problems of motivation and discipline in contemporary classrooms. Teachers identify problem situations in k-12 classrooms and explore alternative approaches to dealing with those problems.

421-811 Structuring Knowledge 2 Cr. Study of methods for structuring knowledge. Relationships between the structure and its application. Structure of knowledge, discipline and curriculum relationships. Prerequisite: acceptance in educational specialist program. F-S

421-816 Instrumentation for Research 3 Cr. Basic concepts in the areas of validity and reliability will be studied and applied to the design of instruments. Emphasis will be placed on conceptualizing the constructs or characteristics to be measured. Techniques of item writing, item analysis, determining reliability, and scaling will be covered, including such ideas as aquiescent set, item difficulty, and discrimination. The student will engage in the study of procedures and techniques for gathering, analyzing, and reporting data and findings as applied to his proposed field study. F-S

421-830 Educational Administrative Behavior 3 Cr. The course will cover the history of the development of administration and the use of theory in the study of organizations, the application of theory to the study of administrative behavior and the school as a social system including the study of the elements of leadership, organizational change, and a review of current and emerging concepts in administrative behavior. Prerequisite: graduate standing.

421-890 Field Study in Professional Education 2-6 Cr. Supervised study which provides the graduate student with the opportunity to: (1) explore in-depth the body of knowledge associated with a se-

lected problem in professional education, (2) provide an educational experience for implementing this knowledge into a selected institutional setting, and (3) devise methods to determine if the implementation is or will be successful. Prerequisite: approval of the director of the major. F-W-S

431-501 Learning Disabilities 3 Cr. Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults. W

431-532 Psychology of the Exceptional Child 2-3 Cr. History and treatment of exceptional individuals; characteristics and development of children who deviate from the norm: learning disabled, gifted, mentally retarded, socially and emotionally disturbed, abused, speech and language impaired, and those with visual, hearing, orthopedic and chronic health problems. F-W

431-555 Issues in Special Education 2 Cr. Current and controversial issues in special education. Prerequisite: 431-532. F

431-559 Curriculum for the Retarded 2 Cr. Program planning for secondary special education (MR) with specific scope and sequence, learning activities, and evaluation techniques for language arts, math, social sciences and science. To be taken concurrently with 431-560. F-W

431-560 Special Education Methods and Materials 2 Cr. Design, development and content of curriculum for secondary educable mentally retarded (EMR) students; materials and methods of presentation. To be taken concurrently with 431-559. F-W

431-561 Prescriptive Diagnostic Teaching 3 Cr. Develop skills for diagnosis and

intervention of behavior and learning problems of the handicapped. Development of and IEP (Individual Education Plan) for handicapped students. To be taken concurrently with 431-562. Prerequisite: consent of instructor. F-W-S

431-562 Clinical Experience With the Handicapped 2 Cr. Tutor a handicapped individual in an on-campus or educational setting. To be taken concurrently with 431-561. Repeatable for credit. F-W-S

431-565 Academic Instruction for Mentally Retarded 2 Cr. Techniques and approaches for teaching basic and functional academics to EMR students. Prerequisites: 431-559 and 431-560. F

431-581 Legal Rights of Handicapped 2 Cr. Current litigation, civil commitment, criminal proceedings, federal and state statutes, and civil rights regarding the handicapped student and adult. Prerequisite: 431-532. F-W

431-585 Introduction to Mental Retardation 2 Cr. Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons. F-W

431-595 The Gifted Student 2 Cr. Characteristics of gifted, creative and talented individuals; identification in educational settings; social, psychological and educational aspects of providing for the gifted throughout school years.

431-630 Mainstreaming Special Students 3 Cr. Learning characteristics and behavior of mentally retarded, learning disabled, socially and emotionally disturbed, hearing and sight impaired, orthopedically and chronic health impaired, speech and language impaired

students; services mandated by PL94-142, M-team process, and individualized educational plan; instruction of handicapped within regular classes. F-W-S

431-660 Practicum in Special Education 2 Cr. Off-campus work and study in educational settings with handicapped youth. To be taken concurrently with 431-661. Prerequisite: consent of instructor. Repeatable for credit. F-W

431-661 Career Education for Handicapped Youth 3 Cr. Techniques for interviewing, planning and directing school programs in career choice for handicapped adolescents; class activities in community job surveys, work placement and work supervision. To be taken concurrently with 431-660. F-W

431-662 Classroom Management Techniques 3 Cr. Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning. F-W-S

431-700 Special Needs Learners in Vocational Education 2 Cr. Overview of legislation, program models: assessment and instructional practices pertaining to vocational education for handicapped, disadvantaged, and gifted students. Emphasis on services provided to special needs learners within regular class.

431-725 Programming for Vocational Special Needs 2 Cr. Typical and alternative vocational programming for Special Needs students. Appropriate management strategies for the various program types.

431-790 Seminar 1-3 Cr. Special topics designed to upgrade the competencies and knowledge of participants on current

developments in the field. Content will change to reflect the state of the art in special education. Repeatable for credit.

459-505 Sign Language I 3 Cr. Basic course in manual communication with the deaf. Intensive practice in expressive and receptive communication. Prerequisite: 459-201 or graduate standing. F

459-506 Sign Language II 3 Cr. Intermediate course in manual communication with the deaf; American Sign Language; increase sign vocabulary and communication speed. Prerequisite: 459-505. W

459-509 Introduction to Biofeedback 3 Cr. Theory and applications of biofeedback in psychology, rehabilitation, medicine and education; in-depth review of the field; appropriate uses of biofeedback as a referral possibility; preparation for supervised clinical biofeedback experience. Prerequisites: 308-132 and 479-110. F

459-510 Clinical Biofeedback Laboratory 3 Cr. Development of clinical skills and familiarization with laboratory monitoring devices and stress management techniques, as they apply to the training of clients in a clinical biofeedback setting. The course also reviews current clinical research, future directions for the field, and ethical considerations. Prerequisites: 308-220, 413-405, 459-509 and consent of instructor. W

459-520 Rehabilitation of the Chemically Dependent 3 Cr. Background in the field of chemical dependency with emphasis on the rehabilitation aspects of the chemically dependent and knowledge of the historical and sociological implications of drug usage. Prerequisites: 459-201 and junior or graduate standing. F-W

459-525 Rehabilitation of the Public Offender 3 Cr. The field of corrections as it concerns the individual and criminal justice institutions; basic legal terms, laws, types of institutions and treatment modalities; treatment effectiveness and trends in criminal justice field. Prerequisites: 459-201 and 479-561 or graduate standing. F-W

459-550 Independent Living 2 Cr. An overview of independent living programs in this country including evolution, goals, methods of service delivery, and program management of ILP. F-W

459-585 Rehabilitation of the Mentally Retarded 2 Cr. Background in mental retardation; vocational evaluation, adult education and adjustment techniques used with mentally retarded adults. Prerequisite: 459-201 or graduate standing. F-W-S

459-587 Handicapped Workers in Business and Industry 3 Cr. Orientation to handicapped workers in business and industry. Focus is upon the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of handicapped workers. Emphasis upon governmental requirements for conformance, linkage between business and rehabilitation, community resources, and staff development. Prerequisite: junior, senior or graduate standing. W

459-601 Rehabilitation in the Private Sector 2 Cr. Introduction to the private-for-profit sector of rehabilitation. Orientation to the contractual services offered by practitioners. Industrial in-plant models will be contrasted to other models for providing rehabilitation services to disabled workers. F-W

459-605 Microcomputer Application for the Handicapped 2 Cr. Use of microcomputer hardware and software to facilitate the development of functional skills of the handicapped. W

459-610 Psychological Testing With Handicapped People 2 Cr. Introduction to psychometric tests; administration, interpretation/scoring and application to handicapped populations. F-W-S

459-680 Principles of Rehabilitation Counseling 3 Cr. Theory and application of counseling processes in rehabilitation settings. Prerequisites: 413-675 and 479-561. F-W-S

459-682 Sexuality and the Disabled 2 Cr. Programs in sexuality, terms and techniques, exploration of personal biases and development of techniques for dealing with sexuality of disabled individuals. Prerequisites: 459-330, 459-680 or graduate standing. F-W

459-685 Group Processes in Rehabilitation Settings 2 Cr. Theory and application of group processes in rehabilitation settings; direct experience as member and facilitator of a group. Prerequisite: 459-680 (undergraduate) 459-761 (graduate) F-W-S

459-700 Seminar--Vocational Rehabilitation 1-2 Cr. A seminar course devoted to the field of vocational rehabilitation and subject materials pertinent to the field. F-W

459-703 Physical Disability and Work 3 Cr. Study of physical disabilities and their vocational implications. F-W

459-704 Laboratory in Work Adjustment 2 Cr. A supervised, practical laboratory experience in work adjustment interviewing, behavioral observation and

recording techniques, adjustment planning and report writing. Prerequisites: 459-724, (may be taken concurrently). F-W-S

459-706 Laboratory in Work Evaluation 2 Cr. Laboratory experiences in the procedures and specific techniques of work evaluation. The course is normally taken in conjunction with the lecture course on work evaluation, 459-723 procedures of work evaluation. Special course fee. F-W-S

459-707 Practicum in Work Evaluation 4 Cr. A supervised practicum experience in the evaluation and training center. The course is designed to provide integration of course material and practical application in working with disabled and disadvantaged clients. Prerequisites: 459-723, 459-610, 459-717 and 459-706, with grade B or better. F-W-S

459-709 Practicum in Work Adjustment 3 Cr. Supervised practical experience in work adjustment; application of the techniques of work adjustment to the problems of clients in a rehabilitation facility. Prerequisites: 459-724, 459-704, consent of instructor, advanced graduate standing. (Grade of B necessary in 459-704 to enter practicum). F-W-S

459-717 Occupational Analysis and Information 2 Cr. Classification of occupations based on different criteria, methods of obtaining occupational information, methods of job analysis and establishment of worker requirements. Emphasis of courses on the needs, abilities and limitations of disabled persons. F-W

459-723 Procedures of Work Evaluation 3 Cr. Procedures of evaluating skills, aptitudes, dexterities, motivation, behavior work habits, tolerances in specific abilities or deficits of the handicapped. Meth-

ods of report writing. Review of research on work evaluation. Field trips to rehabilitation facilities in industries. F-W-S

459-724 Procedures of Work Adjustment 2 Cr. Methods of affecting adjustment in the work personality of the handicapped, concerning such factors as effective work habits, motivational habits, attitude, and responsibility. Methods of job training in rehabilitation facilities. Methods of effective workshop management. Field trips to rehabilitation facilities and industries. F-W-S

459-738 Psychological Disability and Work 2 Cr. Etiology, diagnosis, treatment, prognosis and vocational implications of psychiatric disabilities, mental retardation and brain damage. F-W

459-755 Problems in Vocational Rehabilitation 2 Cr. Identification, selection and completion of a problem in the specialization area of vocational evaluation. The problem project will culminate in a Plan B paper. Prerequisite: 421-740. F-W-S

459-761 Counseling Techniques 2 Cr. Major counseling approaches and their application in vocational evaluation and work adjustment. Emphasis is upon the facilitative dimensions of counseling as they lead to constructive change. F-W-S

459-780 Administration in Vocational Rehabilitation 2 Cr. A lecture course covering the administrative aspects and methods involved in establishing and supervising a vocational evaluation unit or a total rehabilitation facility. Prerequisite: consent of instructor or Vocational rehabilitation major. F-W-S

459-783 Internship in Work Evaluation 4-8 Cr. Supervised 10-week field practice in the techniques of vocational evaluation

and work adjustment procedures. To be completed at selected vocational rehabilitation facilities capable of offering the student an adequate training experience. Prerequisites: 459-707, (grade B or better); advanced graduate standing; approval of instructor. F-W-S

459-789 Internship in Work Adjustment 6 Cr. Supervised practical experience for practitioners/coordinators of work adjustment services. Prerequisites: 459-709, (grade B or better); advanced graduate standing; approval of instructor. F-W-S

479-530 Psychology of Learning 3 Cr. A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized. F

479-535 Motivation and Emotion 3 Cr. An experimentally oriented introduction to the fundamental principles of motivation and emotion. Prerequisites: 479-110, junior standing and 9 or more credit hours in psychology consent of instructor. W

479-540 Psychology of Individual and Group Differences 3 Cr. Nature and extent of differences in individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied.

479-552 Adolescent Psychology 3 Cr. The physical, emotional, social, moral, and intellectual development of secondary school youth. Prerequisite: 479-110. F-W-S

479-561 Abnormal Psychology 3 Cr. A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied. F-W-S

479-570 Assertive Training Procedures 2 Cr. Training in interpersonal behavior and communications in which persons learn to defend their legitimate rights without violating the rights of others. F-W-S

479-574 Psychology of Women 2 Cr. The myths and stereotypes of early psychoanalytic view of women, critical issues and events of female experience, from prenatal through adulthood; meaning of sexuality, contemporary life styles, and the meaning of aging. Prerequisite: 479-110. F

479-579 Public Relations 2 Cr. Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics. F-W-S

479-581 Industrial Psychology 2 Cr. A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology. Prerequisite: 479-110. F-W

479-582 Human Resource Management 3 Cr. Organization and coordination of personnel practices and methods. Con-

sideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation. F-W-S

479-601 Workshop--Special Topics in Psychology 1-3 Cr. Current specialized topics studied in a small group setting utilizing experimental activities. Prerequisite: consent of instructor. Repeatable for credit.

479-632 Perception 3 Cr. This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing. F-W

479-673 Psychology of Stress 2 Cr. Nature of stress and stress-related diseases, stress in daily life, techniques for managing stress, and plans for reducing stress in personal and professional life.

479-690 Psychological Measurement 3 Cr. An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions. W

479-730 Advanced Psychology of Learning 2 Cr. The theories and principles of learning are studied with emphasis upon totalistic models of classroom learning. F-W-S

479-760 Personality 2 Cr. The nature of personality and the conditions which make for its wholesome development, its maintenance, and integration is studied. Personality inventories used for self-analysis are also studied. W-S

479-779 Advanced Public Relations 2 Cr. Practice in planning and directing specific public relations programs, using the case problem approach.

479-850 Psychology of Development 3 Cr. Investigation of individual man, his natures, and development with primary emphasis on the self and implications for education. Study aimed at analysis, synthesis, and evaluation levels through seminar approach.

489-701 Seminar--School Psychological Services 2 Cr. Introduction to the field of school psychology. Roles and functions of the school psychologist are explored as they relate to Wisconsin and the nation; political and legal implication of these roles are identified. S

489-731 Problems in School Psychology 2 Cr. Independent investigation into a carefully delineated area of school psychological services in an attempt to bring evidence to bear on a problem. The use of research techniques is required. Reporting of the study is expected to meet the standards appropriate to scholarly writing by professionals in the field. Prerequisite: 421-740. F-W-S

489-743 Advanced Individual Mental Testing 2 Cr. An experience of supervised practice in the administration, scoring, and interpretation of individual tests of mental ability. Emphasis is directed toward the use of such evaluation of intelligence to case history material, the integration of related psychological findings, the determination of prognosis, and

planning for the individual client. Prerequisite: 413-741. W

489-745 Assessment of Personality (Projective Techniques) 2 Cr. History, theory and methodological consideration and studies of projective instruments. Instruction in administration, scoring, and interpretation of some currently used devices leading to a knowledgeable understanding of the instruments. Prerequisites: 489-743 and 413-748. S

489-753 Psychometric Theory and Application 2 Cr. Introduction to psychoeducational theory and concepts in relation to inter and intraindividual assessment. Covers basic statistics, in regard to test construction, test uses and misuses, test selection, purposes of testing, ethics, basic test interpretation processes and types of tests and testing programs frequently employed by psychoeducational specialists. F-S

489-753A Lab--Guidance and Counseling Services 1 Cr. Introduction to basic psychometric materials and techniques employed by counselors. Included are individual inventories, aptitude and achievement tests, problem surveys and other screening devices. F-S

489-753B Lab--School Psychology 1 Cr. Introduction to basic psychometric materials and techniques employed by school psychologists. Emphasis is placed upon individual mental tests and procedures. F-S

489-766 Educational Applications of Neuropsychology 2 Cr. The application of neuropsychological theory and assessment techniques to the education of children who possess cortical damage or dysfunction. Prerequisites: 489-753, 489-753B. S

489-768 Diagnosis and Remediation of Learning Disabilities 2 Cr. Develops expertise in understanding human information processing, the administration and interpretation of sophisticated psychological diagnostic instruments, and the prescription of appropriate and precise remediation. Current research in learning disabilities is examined and evaluated. Prerequisite: 413-748. W

489-768A Learning Disabilities--Diagnosis and Remediation 1 Cr. Laboratory experience where administrative and scoring skills are developed in reference to instruments and techniques introduced in 489-768. Prerequisites: 489-743 and 489-768. W

489-770 Thesis 2-6 Cr. Independent research under direction of investigation advisor. Selection of problems, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Prerequisites: 421-740 and approval of major director. Repeatable for credit. F-W-S

489-778 Psychoeducational Disability 3 Cr. Etiology, characteristics, and individual educational program (IEP) development for children with exceptional educational needs (EEN) such as mental retardation, emotional disturbances, behavioral disorders, social/cultural deviation and multi-handicapping conditions. F

489-781 Field Practicum in Psychoeducational Services I 3 Cr. Provides the prospective school psychologist with the initial "on site" experience of functioning as a school psychologist. Special educational evaluations, programming and in-

roduction to complex cases and staffings. Prerequisites: 413-743 and 413-748. F-W

489-782 Field Practicum in Psychoeducational Services II 3 Cr. Provides continuing "on site" experience of functioning as a school psychologist. Increased applications of expanded assessment skills, more complex diagnostic problems, intervention techniques and leadership roles within the placement setting. Prerequisite: 489-781. F-W

489-784 Clinical Practicum in Psychoeducational Services I 2 Cr. This practicum course is designed to provide more intensive and extensive clinical experiences. Work with pre-school children, post school young adults, school age children and their parents. Special assessment and intervention techniques are emphasized. Prerequisites: 489-743 and 413-748. F-W-S

489-785 Clinical Practicum--Psychoeducational Services II 2 Cr. Provides integrative learning experiences into the role and style of function appropriate to the individual and the profession. Long term therapeutic contacts are required. Experience in one or more areas of specialization is available. Prerequisite: 489-784. F-W-S

ACADEMIC AFFAIRS

500-700 Graduate Residency Seminar 1 Cr. A structured intensive graduate seminar designed to fulfill expected residency outcomes of peer group interaction, opportunity for reflection and integration of knowledge, social interaction, exposure to professional role models, and su-

pervised self-evaluation of the student's growth and capabilities. Prerequisite: graduate standing.

500-735 Investigations (Graduate Degree Which Student Is Seeking) 2 Cr. A research experience which culminates in a Plan B paper. Prerequisites: 421-740 and admission to degree candidacy. F-W-S

MEDIA TECHNOLOGY

600-504 Elementary Photography 2 Cr. Fundamentals of photography: aesthetics, basic theory, camera operation, film selection, lighting, roll-film processing, contact printing, enlarging and print finishing. Student must provide own camera. F-W-S

600-535 Film--History and Appreciation 3 Cr. Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers. F

600-540 TV--Appreciation and Criticism 2 Cr. Analysis of major TV program types; positive and negative contributions of TV; commercials; children's programming; TV viewing diary; development of TV Action Plan. W

600-560 Audiovisual Communications 2 Cr. Methods of evaluating and using audiovisual materials effectively; experience in operating equipment; basic techniques of media preparation. F-W-S

600-561 Preparation of Audiovisual Materials 2 Cr. Planning, designing and producing instructional and presentation materials. Prerequisite: 600-560. F-W-S

600-570 Introduction to Computer-Assisted Instruction 2 Cr. Application of computers to training and instruction. Theory and design of instructional material for presentation by the computer. Courseware development tools and their use. Prerequisite: consent of instructor or curriculum course. S

600-573 Educational Television Utilization 1 Cr. Effective use and evaluation of telelessons in teaching; operation of TV receiving and distribution equipment; curriculum considerations for integrating ETV programming into classroom instruction. SE

600-580 Microcomputer Applications--Words/Data 2 Cr. Applications of specific commercial microcomputer programs for personal, professional, and student use. Emphasis on word processing, numerical and file management programs. W-S

600-605 Advanced Photography 2 Cr. Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques. Prerequisite: 600-504. F-W-S

600-615 Micrographics Fundamentals 1 Cr. Fundamentals of microform production and use; descriptions and production of microformats, COM, color microfiche, storage and retrieval concepts, micropublishing, acquisitions, management and legal aspects of microforms. F-SE

600-630 Audio/Film/TV Production Fundamentals 3 Cr. Instructional film, audiotape and videotape production fundamentals. For media technology majors; not open to those taking 391-554. F-S

600-632 TV Production 2 Cr. Advanced instruction in small-format and broadcast television program production, content development and utilization: program development, equipment use and practicum instruction in producing, directing, script preparation, production engineering, audio control, video switching, camera operation, floor coordination and lighting. Prerequisite: 600-630. W-SO

600-640 Telecommunication Systems and Teleconferencing 2 Cr. Interactive teleconferencing techniques. Applications, effective utilization and cost-effectiveness of information distribution systems, including telephone, television, teletext, videotext, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics. F-W-S

600-645 Color Photography 2 Cr. Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing. Prerequisite: 600-504. F-W-S

600-655 Slide/Tape and Multi-Image Production 2 Cr. Practical experience in planning, producing, and presenting media productions for instruction/training. Advanced applications of photography, audio, video, and programming related to slide/tape and multi-image presentations. Prerequisites: 600-560 and 600-630. W

600-710 Media Reference Fundamentals 2 Cr. Survey of bibliographic tools necessary for locating learning resources; information sources used in media center reference service; and practice in consulting with users.

600-715 Media Selection 2 Cr. Media selection and acquisition fundamentals for school and college media centers. Principles, standards, tools and procedures for building a collection of print and audio-visual materials. W-SE

600-717 Media Equipment 2 Cr. Principles and procedures for the selection, purchase and maintenance of media technology equipment for education and training. Prerequisite: 600-560, or equivalent. F-SO

600-718 Introduction to Problems in Media Technology 1 Cr. Selection criteria for problems in media technology and preparation of a detailed proposal to explore a particular problem. Take prior to or concurrently with 421-740. Prerequisite: consent of instructor. F-S

600-720 Media Cataloging and Organization 2 Cr. Principles and techniques for the cataloging, organization, circulation, conservation and management of print and audio-visual materials in school and college media centers.

600-722 Problems in Media Technology 2 Cr. Identification, selection, and completion of a problem in audio-visual communications, culminating in a Plan B paper. Prerequisite: 421-740. F-W-S

600-730 Media Retrieval Systems 2 Cr. Information storage and retrieval models applied to media centers and their operation. Compares traditional models with the logic of manual, mechanical, and electronic retrieval systems.

600-732 Planning Media Facilities 2 Cr. Planning physical facilities for media production and distribution centers; large group multi-media auditoria; small group instructional area; and mediated carrels. Consideration of technological

and environmental factors. Emphasis on working relationships with architects. Prerequisite: 600-560. SO

600-740 Instructional Development 2 Cr. Systems approach to instructional improvement. Identification and analysis of instructional needs; design of instructional alternatives; selection and development of instructional packages; and the evaluation and validation of the resulting products in terms of student learning. Prerequisites: 600-560, 600-561. F-W-S

600-750 Problems in Industry and Technology--Photography 2-6 Cr. Substantive study and activity for specialists in the photography field to include library work, field observation, laboratory work planned by the student and approved and supervised by a faculty consultant in photography. Preparation of a technical report may be repeated for a maximum of six semester credits. Prerequisites: 190-740 and consent of the department chairman.

600-760 Educational Media Administration 2 Cr. Administration and supervision of school and college educational media programs. Group field projects

supplement discussions of related literature. Prerequisite: 600-560. W-SO

600-770 Thesis--Media Technology 2-6 Cr. Independent research under direction of investigation advisor. Selection of problem, development of outline, review of literature, compilation of bibliography, plan of method of attack, conduct of research, interpretation of findings, and preparation of the final paper according to thesis standards. Student may enroll for 2, 4, or 6 semester hours of credit in various terms with a final total of six. Prerequisites: 421-740, approval of major director. F-W-S

600-788 Media Technology Internship 1-8 Cr. Practical experience in the various operational aspects of a school, university, or special media center. The student will develop his internship program in conjunction with his major advisor and the media center director. Prerequisite: consent of academic advisor. F-W-S

600-790 Seminar 1-3 Cr. Specific content is designed to upgrade the competencies and knowledge of the participants. Content for each offering will change to reflect the current state of the art in media technology.